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REPORT RESUMES

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CLASSROOM ADJUSTMENT OF THE UNDERCHOSEN CHILD THROUGH CHANGES IN TEACHERS' ATTITUDES AND BEHAVIOR.

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DESCRIPTORS- CONTROL GROUPS, *TEACHER ATTITUDES, *EXCEPTIONAL (ATYPICAL), *SOCIALLY MALADJUSTED, *TEACHER EVALUATION, EXPERIMENTAL TEACHING, *CLASSROOM TECHNIQUES, MINNESOTA TEACHER ATTITUDE INVENTORY (MTAI), PURDUE TEACHERS' EXAMINATION, CALIFORNIA ACHIEVEMENT TEST (CAT), CALIFORNIA TEST OF PERSONALITY (CTP), TROY, ALABAMA

THE OBJECTIVE WAS TO DETERMINE WHETHER AN INSERVICE PROGRAM WHICH STRESSES THE STUDY BY A TEACHER OF A SINGLE SOCIALLY UNACCEPTED CHILD LEADS TO A DESIRABLE CHANGE IN THE ATTITUDES, BELIEFS, AND CLASSROOM BEHAVIOR OF THE TEACHER. THE EXPERIMENTAL GROUP CONSISTED OF 46 CLASSROOM TEACHERS IN 6 COUNTIES, WITH ONE UNACCEPTED CHILD IN EACH OF THE CLASSROOMS CHOSEN FOR INTENSIVE STUDY BY THE TEACHER. THE TEACHERS IN THE EXPERIMENTAL GROUP FORMED A SPECIAL INSERVICE STUDY GROUP UNDER THE DIRECTION OF THE EXPERIMENTERS AND, IN ADDITION, THEY WERE INVOLVED IN CONFERENCES AND OTHER SPECIAL TECHNIQUES. A CONTROL GROUP OF 46 MATCHED TEACHERS WAS CHOSEN BUT DID NOT PARTICIPATE IN THE EXPERIMENTAL INSERVICE PROGRAM. TO DETERMINE THE EFFECT OF INSERVICE TRAINING PROGRAM, THE CALIFORNIA ACHIEVEMENT TEST OF PERSONALITY WAS ADMINISTERED TO ALL CHILDREN IN BOTH GROUPS. SOCIOMETRIC TECHNIQUES WERE USED TO DETERMINE CHANGE IN THE SOCIAL STRUCTURE WITHIN EACH CLASSROOM. BOTH GROUPS OF TEACHERS WERE COMPARED ON THE BASIS OF THE MINNESOTA TEACHER ATTITUDE INVENTORY AND THE PURDUE TEACHERS' EXAMINATION. ALSO, DATA WAS KEPT ON EACH TEACHER'S ABILITY TO EXPECT AND DEAL WITH CHILDREN'S UNACCEPTANCE OF OTHERS. ANALYSIS OF DATA REVEALED THAT--(1) EXPERIMENTAL TEACHERS UNDERWENT GREATER CHANGES IN ATTITUDES OF ACCEPTANCE AND OBJECTIVITY, AS MEASURED BY MTAI AND THE PURDUE EXAMINATION, IN DEALING WITH CHILDREN THAN DID THE CONTROL TEACHERS, AND (2) BECAUSE OF THE SHORT TIMESPAN OF STUDY THE CAT AND CTP DATA WERE INSUFFICIENT. (GC)

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CLASSROOM ADJUSTMENT
of the
UNDERCHOSEN CHILD
Through Changes in Teachers' Attitudes and Behavior

By

The Staff of the Troy Child
Growth and Development Study

G. R. Boyd, Director

Troy State College
Troy, Alabama

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This study would not have been possible without the help of the competent office secretaries who worked long and faithfully in order to do the extra work imposed by the project.

It was the co-operation of these people and possibly others unintentionally omitted that made this report possible.

G. R. Boyd, Dean
Troy State College

FOREWORD

This report covering one year is a description of the culminating period of a much longer study project by in-service teachers under the leadership of Troy State College.

For several years preceding 1953, when the first organized efforts began, the idea of making Troy State College a center for stimulating and guiding interest had been discussed by certain members of the staff including the president of the College. This group felt that there was a need for such special effort with teachers in the field of child development. Several conditions were pointed out in the discussions to justify such an effort under the direction of the College.

In the first place it was recognized that research and experimentation in child development were rapidly expanding available knowledge in that field. The awareness of this increasing knowledge provoked several questions from certain people. Should such knowledge tend to improve or change practices in the classroom? If so, are in-service teachers keeping abreast of the new knowledge about children in a functional way? The preservice education of teachers was not excluded from the discussion, because it was conceded that it must also keep abreast of new knowledge.

Out of these questions grew the idea of studying child development with in-service teachers to see what changes would occur in the teachers and their procedures with children. Such a study was initiated and went along for several years with considerable enthusiasm. The final stage, 1959-60, was the application of a more rigid research design and procedure. The results are set forth in the following pages.

C. B. Smith
President

CLASSROOM ADJUSTMENT OF THE UNDERCHOSEN CHILD THROUGH CHANGES IN TEACHERS' ATTITUDES AND BEHAVIOR[1]

PROBLEM

The Troy Child Growth and Development Research Project was an attempt to improve the classroom behavior of pupils and teachers by having the teachers participate in in-service training programs dealing with child growth and development concepts and principles. Child development specialists have claimed that better understanding of these principles and concepts by teachers results in changod teacher behavior in the classroom. They accept the conclusion that this changed behavior in turn improves the social-emotional climate of the classroom, resulting in better mental health atmosphere and more efficient learning on the part of pupils. Educational literature on methodology supports this conclusion. It is the purpose of this study to test empirically some claims of this kind.

The study consists of two parts. The first part, hereafter referred to as the Survey, deals with an evaluation of a some-

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[1] This investigation was financed by grants from the General Fund of the Troy State College; the Alabama State Department of Education; the Division of Mental Hygiene, Alabama Department of Public Health; and the U.S. Department of Health, Education, and Welfare; Office of Education, Public Law 531, Contract Number 672 (8376).

what informal in-service training program that was conducted over a six-year period. The second part, hereinafter referred to as the Experiment, deals with an evaluation of the effects of an intensive in-service training program that was conducted during a single year. Each of these parts is described subsequently.

Survey

The survey aspect of the study is concerned with an "action-research" appraisal of the outcomes of the Troy Child Development Program which began in 1953. Thus the Survey covers the period from 1953 until late 1959.

The Child Development Program began in 1953 on the Troy State College campus, in cooperation with the State Department of Education. The purpose of the program was to encourage and implement the use in the classroom of increasing knowledge about the growth and development of children. The study involved selected classroom teachers in six county and two city systems in the area served by the college.

The first year was largely exploratory and the second year was devoted to orientation of participants and resulted in increased interest on their part. Unifying and guiding influence was furnished by a supervisor from the State Department of Education, by consultants from the State Department of Health, Mental Hygiene Division, and by the spring, summer, and fall conferences on the campus of Troy State College. Beginning with the third year, the College furnished a part-time coordinator in the person of the director of the campus laboratory school. This coordinator was able to visit each unit from three to eight times each year. This visitation with continued well-planned conferences in spring, summer, and fall on the campus was adequate for unifying purposes.

The program of study became better focused the second year when each participating teacher was asked to select an isolate child, using a sociometric test. Later this pupil was defined as an underchosen child. It was assumed that the thorough study of one child would develop skills of study and discoveries that would be helpful in understanding the growth of other children.

Much attention was given during the second and third years in developing study skills, including administering and interpreting sociometric tests, selecting and observing the child to be studied and writing an anecdotal record, including remedial action taken. Much discussion, reading, and practice were essential to gain these proficiencies.

By the fourth year there were a definite and committed group of participating teachers, a permanent advisory committee, a well-defined and well-planned set of objectives, and a sufficient mastery of study skills to enable the participants to move forward with confidence.

Periodic efforts were made to appraise progress. The first was in the second year, 1955, when criteria were worked out by a committee of the College faculty for use in judging anecdotal records of children. When used in conferences this practice proved very helpful. A second effort was made in 1957, the end of the fourth year, when the participants evaluated their own growth. Although this personal evaluation was entirely subjective, it was very revealing as well as stimulating.

The fifth and sixth years' work centered around those activities that were fairly well established during the fourth year. A grant of $31,000 from the United States Office of Education was announced June 3, 1959, to effect an experimental evaluation of the project.

Conferences in summer and fall of 1959, therefore, concentrated on organizing and planning the study's continuation as a formal research project.

An account of the training programs that were conducted during these years appears in a later section. The collection of data to evaluate the outcomes of this six-year program began in the fall of 1959. A full account of the method by which this was done is presented later; however, forty-six teachers who participated in the program for various numbers of years were matched with a set of control teachers who had not participated in the program. The expected outcomes were cast as research hypotheses and data from teachers and their pupils were collected to test them. It should be noted here that not all experimental teachers participated in the training program from the time it began until 1959. However, all experimental teachers participated at least two years.

One group of hypotheses related to the acceptance and objectivity with which teachers deal with pupils, and with their ability to identify pupils from their classes who would be most and least frequently chosen on a sociometric test, and who would score highest and lowest on the California Test of Personality. The specific hypotheses in the group were as follows:

1. There will be no significant difference between the experimental and control teachers' attitudes of acceptance and objectivity in dealing with pupils, as measured by mean scores on the Minnesota Teacher Attitude Inventory and the Purdue Teacher Examination, respectively, at the beginning of the year.

2. There will be no significant difference in the accuracy with which experimental and control teachers, individually and as a group, identify after one month with their pupils the three least chosen pupils in their classroom, as revealed by a sociometric test.

3. There will be no significant difference in the accuracy

with which experimental and control teachers, individually and as a group, identify after one month with their pupils the three most chosen pupils in their classrooms, as revealed by a sociometric test.

4. There will be no significant difference in the accuracy with which experimental and control teachers, individually and as a group, identify after one month with their pupils the three lowest scoring pupils in their classrooms on the California Test of Personality.

5. There will be no significant difference in the accuracy with which experimental and control teachers, individually and as a group, identify after one month with their pupils the three highest scoring pupils in their classrooms on the California Test of Personality.

A second group of hypotheses dealt with relationships between the time the teacher spent in the in-service training program and her accuracy in identifying the pupils in her classroom most frequently and least frequently chosen by their classroom peers on sociometric devices and who score high and low on personality inventories.

6. There will be no significant relationships between the number of years experimental teachers participated in the in-service program and their accuracy at the beginning of the year in identifying the three most accepted pupils, as revealed

by the sociometric tests, in their respective classrooms.

7. There will be no significant relationships between the number of years the experimental teachers have participated in the in-service program and their accuracy at the beginning of the year in identifying the three least accepted pupils, as revealed by the sociometric tests, in their respective classrooms.

8. There will be no significant relationships between the number of years the experimental teachers have participated in the in-service program and their accuracy at the beginning of the year in identifying the three most socially adjusted pupils, as revealed by total score on the California Test of Personality, in their respective classrooms.

9. There will be no significant relationships between the number of years the experimental teachers have participated in the in-service program and their accuracy at the beginning of the year in identifying the three least socially adjusted pupils, as revealed by total score on the California Test of Personality, in their respective classrooms.

Experiment

The experimental phase of the study was conducted during the 1959-1960 school year. It consisted of an in-service program including a highly structured series of conferences, study group meetings, intensive and supervised study for the experimental teachers, plus study by each teacher of an underchosen pupil from her classroom.[1] A complete account of the training program and the matching of experimental and control groups appears in later sections. The emphasis in the training program was on the intensive instruction of teachers in child development principles and concepts, methods of implementing them in the classroom, and in perfecting their command of child study techniques. Each experimental teacher selected an underchosen pupil from her classroom for intensive study during the school year. Each experimental teacher was matched with a control teacher. An underchosen pupil was selected by the project staff from each control classroom and his identity was not made known to the control teacher. The experimental and control teachers who participated in this phase of study were those on whom the survey evaluation was based.

The following hypotheses were tested to evaluate some of the outcomes of the intensive training program which was one academic year in duration. The actual time between fall testing and spring testing was seven months.

1. There will be no significant difference between the experimental teachers' attitudes of acceptance and objectivity, in dealing with pupils, as measured by mean scores on the

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[1] A pupil was to be underchosen when he received none or only one choice from his classmates on a sociometric test.

Minnesota Teacher Attitude Inventory and the Purdue Teacher Examination, respectively, at the end of the year and at the beginning of the year.

One group of hypotheses dealt with expected changes in the classroom behavior of the underchosen pupil as a consequence of changed teacher classroom behavior resulting from teacher participation in the in-service training program.

2. There will be no difference between the mean acceptance at the beginning and at the end of the year, of experimental underchosen pupils by their classroom peers.

3. There will be no difference at the end of the year between frequency of choice by classroom peers of the underchosen pupil and his counterpart; and there will be no difference between the mean frequency of choice of the underchosen child in the control and experimental groups.

4. There will be no difference in gain in achievement during the school year, as revealed by the California Achievement Test, between the experimental and control group of underchosen pupils.

5. By grade level, there will be no difference in mean scores on the California Achievement Tests at the end of the year between the experimental and control underchosen pupils after initial status is covarianced out.

6. There will be no significant difference in mean gain

during the school year in social-emotional adjustment as measured by the California Test of Personality between the experimental and control underchosen pupils.

7. There will be no significant difference at the end of the year between mean scores on the California Test of Personality of the experimental and control underchosen pupil after initial status is covarianced out.

Another group of hypotheses dealt with determining the extent of change in teacher attitude and the extent of pupil changes in adjustment and achievement.

8. Over all teachers experimental and control, there will be no significant relationship between change in attitude as revealed by pre- and post-administrations of the Minnesota Teacher Attitude Inventory, and the amount of unaccepted pupil gain in adjustment, as revealed by pre- and post-administrations of the California Test of Personality.

9. Over all teachers experimental and control, there will be no significant relationship between change in attitude as revealed by pre- and post-administrations of the Minnesota Teacher Attitude Inventory, and the amount the underchosen pupils gain in achievement, as revealed by the pre- and post-administrations of the California Achievement Test.

The final group of hypotheses dealt with the effect on all pupils of the teacher's concerted study of one underchosen pupil in the classroom.

10. There will be no difference at the end of the year in mean scores after covariancing out initial status on achievement, as measured by the California Achievement Test, of all pupils of each pair of experimental-control teachers.

11. There will be no significant difference at the end of the year between the mean scores after covariancing out initial status on achievement, as measured by the California Achievement Test, of all pupils of all experimental teachers and all pupils of all control teachers.

12. There will be no significant difference at the end of the year between mean adjustment scores, as revealed by the California Test of Personality, of all pupils of each pair of experimental and control teachers.

13. There will be no significant difference at the end of the year between mean adjustment scores, as revealed by the California Test of Personality, of all pupils of experimental teachers and of all pupils of control teachers.

SURVEY OF LITERATURE

The research on attitudes, the process of changing attitudes and the results of such changes, leaves much to be desired. This is understandable because clear-cut, objective evidence is difficult to obtain. As a result, much theoretical speculation of the type which does not lend itself to precise rigorous experimental research has occurred. The professional literature related to this research includes materials based on long periods of observation and experience as well as the many accounts of attempts at objective verification of philosophical and practical considerations.

The Teacher as a Mental Hygienist

A recent discussion of the role of today's teacher (Michal-Smith, 1960) indicates the importance of the teacher's self-concept in determining his ability to handle the varied role expectancies demanded by parents and the community. It was pointed out that teachers find themselves the objects of love from children who do not get the affection they need at home, and of hate from those who have come to fear parents as symbols of authority and who in turn transfer these fears and hatreds to the teacher. The teacher must learn to understand himself in order to assume the varied relationship roles needed in the classroom and in the community.

The importance to teachers of mental health concepts was dramatically pointed out in Wickman's (1928) classic study more than three decades ago. In effect, this study constituted an attack on the teachers' ways of dealing with children since teachers' attitudes were widely at variance with those of clinicians. Stouffer (1952) reported a continuing trend toward closer attitudinal agreement between the views of teachers and those of clinicians.

Reviewing the Wickman study and its follow-up studies, Beilin (1959) raised the challenging question as to whether the attitudes of the two groups with such divergent role expectations whould be expected to have the same attitude. It is interesting to note that the research has consistently shown elementary teachers' views to be more nearly like those of the clinicians than are the views of secondary teachers. Sparks (1952), however, reported findings very similar to those of Wickman.

The most casual review of recent teacher education journals and related professional journals quickly reveals the concern for good mental health of teachers and for good mental health practices in the classroom. Kinzel's comment (1957) on the teacher's task is representative: "Why teach a child to read and write and spell, if we fail to teach him to handle his feelings." From the viewpoint of a cultural anthropologist, Henry (1957) noted that attitudes of children are shaped and molded into a "tightly integrated system" in the classroom by a skillful teacher.

Role of the Teacher

The studies previously cited (Wickman, 1928; Stouffer, 1952; and Beilin, 1959) and of Clark (1951) point out the need for better mental health practices of teachers. Because of the rapidly and continuously changing social structure of American society the teacher's role no longer can be only that of an imparter of knowledge. Almost every possible role from therapist to parent surrogate has been assigned to teachers. Franklin (1954) warns that the teacher's role is not that of a therapist. Rather, the use of expressive materials such as clay, paintings, and drawings helps the teacher understand the child and at the same time assists in providing a climate conducive to individual growth. Symonds (1954) hypothesized that the manner of teaching is an expression of the teacher's basic personality reactions and these reactions constitute the core of teaching behavior in the classroom. On the basis of Rorschach and TAT protocols supplemented by interviews, he found teaching effectiveness to be related to feelings of adequacy, amount of projection, job satisfaction, ability to control aggression, maturity, flexibility, and sexual background. He concluded that a teacher's ability and effectiveness are functions of personality.

Effectiveness of Consultants

Since the publication of the American Council on Education studies by Prescott and his associates (1945) on helping teachers understand children, numerous studies have been reported in which consultants were used in child study projects. Research by Brandt and Perkins (1956, 1957), Prescott (1957) and Perkins (1958) represents a continuation and refinement of Prescott's earlier efforts. They claim to have demonstrated definite changes in teacher attitude and behavior over a period of three years as a result of a planned, consultant-directed, program of in-service education. Methods similar to those employed by Prescott and Associates (1945) were used by Kurtz (1950) and by Hufstedler (1950). A variation known as the workshop technique was employed by the latter. Dysart (1953) reviewed the use of consultants in an in-service training program for teachers in the action techniques of sociodrama. Both quantitative measurement and qualitative evaluations of teachers before and after the in-service training program were made in both an experimental and control group. The major outcome was the fact that a laboratory-workshop in in-service training for teachers could develop the capacity of teachers to change the social climate in the classroom. The use of consultants seemed to cause teachers to work on more specific problems than is the case when consultants are not brought into the child study program procedures. It is common knowledge that consultants are used repeatedly in in-service training of teachers on an _à priori_ belief that such use will result in improved classroom practices.

Techniques

Techniques involved in effective consultant use in in-service training of teachers vary both with the needs of teachers and the availability of consultants. The consultant may serve in the capacity of teacher, lecturer, discussion leader, counselor, or in other similar roles. A considerable amount of planning and direction must initially occur to assure the most effective use of the consultant's time. Prescott's technique was principally one of teacher and discussion leader. Other consultants served as workshop coordinators. Haas (1948), reporting the Inglewood project, describes an approach made by Gertrude Howard, principal of a junior high school, in which sociometric, sociodramatic, and psychodramatic techniques were used. Teachers met with consultants in small groups for an hour and a half conference once each week. The teachers then worked with the children in the classrooms. Frequently consultants gave demonstrations of sociodrama and psychodrama in the classrooms. Teachers shortly began to utilize these techniques in their own teaching. A series of four two-hour meetings with parents was held in order to give parents the background and the techniques being employed with their children. Careful evaluation of the project was made and reported by Taft (1948) and Haas (1948) reported on the role of the consultant.

Teacher Participation

Teachers have long participated in child research, not as researchers nor as learners but rather as gatherers of information for others. Recent thought has indicated the need for active research participation on the part of teachers, not only because they are close to and aware of the problems to be solved, but also to challenge them to improve their instructional practices.

Acquiring Information

Much has been written about the importance of child development knowledge and concepts in understanding child behavior. Yet, there is little scientific evidence that acquiring information results in improved understanding and changed behavior. Morgan (1957) stressed the importance of a teacher's knowledge of scientific facts in order to arrive at valid understanding of the causation of specific behaviors, and in order to assume more effective roles in facilitating the child's learning. He proposed an organizing framework of concepts as a guide to child study. Nance (1959) proposed that factual knowledge be supplemented by insights gained through continuous observation of children along with a program of evaluation in terms of stated goals and objectives.

Acquiring Skills

Recent developments in group dynamics have been influential in aiding teachers to acquire skills through active involvement. Kawin (1950) used group methods in a program of child study in an attempt to educate teachers by involving teachers in group participation. Some variation of the discussion technique is commonly used. Maier (1952) listed several types of group approaches purported to increase cooperation and productivity in industry. He described several types of discussion techniques such as the developmental discussion where a problem situation is presented and the group works together to arrive at best solutions; the free discussion technique where values and attitudes can be expressed and shared; the risk technique where fear and worries of the individual can be expressed; as well as sociodrama and the various role-playing techniques. Fleming (1951) described a study involving parent-teacher interaction and reported positive outcomes which included the reduction of anxiety of parents over marks and academic achievement as well as an increased general understanding by teachers of factors influencing the child. Such factors included the presence of grandparents in the home, effects of the father's absence from the home, the mother's being employed, parents' over-sensitivity about the child's health, parents' excessive social life, and the parents causing the child to be over-dependent.

Changing Teacher Attitude

Importance of child development concepts

Teacher education today, especially the education of elementary teachers, is generally founded on concepts, principles, and practices based on several decades of child development research. Such findings pertinent to this research have been summarized, interpreted, and related to practical application to methodology and curriculum in such textbooks as those of Jersild (1948), Millard (1951), and Olson (1959).

Process of changing attitudes

The most persistent effort to demonstrate the ability to change teacher attitudes in keeping with child development concepts through child study as an in-service education technique has been the monumental work of Prescott and his associates (1945, 1957). Brandt and Perkins (1956, 1957), reporting on the University of Maryland's Institute of Child Study program, stated that teachers participating in the program came to interpret information about children in a scientific way. More than 40,000 teachers, administrators, and supervisors from all grade levels participated in a voluntary three-year program. Each participant selected a child from his classroom to study and report on at meetings held every two weeks throughout each school year. A study made by sixteen independent researchers showed that teachers became more objective, more factual, and more scientific in describing children as a result of such participation. They learned to analyze behavior without bias according to scientific principles. Their classrooms became more democratic as the teachers changed to more positive ways of working with children. They learned to praise and encourage the child and increased their understanding of him and his development. Although academic achievement did not seem to improve, teaching became more satisfying and more effective.

Dreikurs (1959) believes that the Adlerian teleo-analytic approach to understanding children would permit teachers to understand the child's motivations and their own highly detrimental role in fortifying and supporting mistaken goals. He pointed out that if the teacher really wishes to find out why the child misbehaves, he has only to note his own spontaneous and impulsive reaction to the child's misbehavior.

Gordon (1959) reported that in courses in child development teachers learned through observation to hypothesize as to role of past and present experiences on a child's behavior and to understand the role of the child's own perceptions and interpretations of his experiences. As a result of his research he concluded that it is possible and reasonable to teach students to use observations from a perceptual view point. They not only overcame their problems of projection but gained self-insight as they saw their projections in operation. The major difficulty remains in the problem of validity of the observer's conclusions.

Anderson and Zimmerman (1950), using the Purdue Teacher's Examination, reported a study concerned with teacher attitude changes. Each teacher in the program selected a child for study and kept observational records on the child over a two-year period. Attitude changes on the part of teachers involved in the child study program differed significantly and in a positive direction from those of teachers not involved in such a study. Rocheio and Kearney (1955) found that the teachers' scores on MTAI, which purports to measure the type of social climate a teacher will maintain in the classroom, correlated significantly with the number of years of college work the teachers had taken. When principals and other professional educators rated these teachers on pupil-teacher rapport and correlated the ratings with MTAI results, correlation coefficients ranging from .46 to .60 were obtained. McGee (1955) in a study of authoritarianism and its relation to the teacher's classroom behavior employed the California F-Scale to obtain measurers of teachers' authoritarianism and then related these findings to observational records of teacher's behavior. The results showed that a significant relationship existed between

F-Scale measures of authoritarianism and teacher demonstrations of authoritarianism in the classroom.

These and numerous other scales have been employed to obtain measures of teacher attitudes. Empirical research relating teacher's attitudes to their own classroom behavior generally has revealed positive correlations. Abrahamson (1952) reported a study in which teachers met once a week with a consultant to discuss problems centered around the emotional needs of children. Positive gains for the teacher in terms of understanding the relationship of emotional needs and overt behavioral expressions as well as understanding ways to meet these needs were found. Teachers, after the fifteen week course, reported a considerable amount of improvement in their methods of handling children's behavior and in alleviating many of the emotional problems manifested by children.

Richardson (1958) evaluated an extensive child study program in California which used the case study conference method. As a result of the three methods used -- namely, child guidance conferences, the three-year Maryland plan, and observing and listening to children as a part of curriculum development -- certain conclusions were reached. In the main, they indicated that teachers gained insight into children's problems and became aware of the expression of children's feelings as objective facts rather than occasions for flippant judgments.

The inadequacy of adult understanding of child behavior became evident.

Numerous researchers have reported on the use of sociometric techniques as new skills for teachers. Among these are G. H. Smith (1950), Cunningham (1951), W. D. Smith (1951), and Jennings (1943, 1948). Reliability and validity studies of sociometric techniques have been made by Byrd (1951) and by Davis and Warnath (1957). Of particular interest in sociometric research have been the explorations into an analysis of personality and behavioral characteristics of the socially accepted and socially unaccepted child.

Developing understanding

Group behavior research summarized by Trow and his colleagues (1950) contains the following generalizations which are pertinent to this study: (a) the attitudes of an individual have their anchorage points in the groups to which they belong, (b) the conduct and beliefs of children are to a great extent regulated by the small cliques or friendship groups within a classroom, (c) failure to learn may be frequently construed as resistance to change on the part of the child, and the teacher must have some understanding of this resistance and how to meet it, (d) the more cohesive groups maintain their efforts toward goals when frustrations are met better than do the less cohesive groups, (e) clique structures are products of disruptive forces within a classroom and the wise teacher may alter the forces which determine the attractiveness of the group for the members and thereby toward the development of the disrupted clique structure, and (f) individuals who are to work in group situations can learn group skills most effectively if their training includes group work.

Cooperation at the local level

Corey (1953) in his publication on action research has outlined plans for local cooperative effort by teachers to study children and to gain new skills. Foshay and Caswell (1950) have proposed methods for studying social development of children by teachers at the local level. Henderson (1955) reported on teacher's self-directed child study efforts in rural New York schools. In this program, anecdotal recording procedures were used and appeared to bring changes in teachers' attitudes and in the diagnoses of behavior problems which soon came in line with those of clinicians. Farmer and Rossman (1951) have reviewed the efforts of a child study group in West Virginia operating as a workshop course. This workshop course patterned after Bullis' Teach Children How to Live showed changes in attitudes of the teacher after participation.

Noteworthy is the Troy study which preceded this research.

Green (1953) reported a long term plan of action involving the use of consultants and faculty from a college in cooperation with a group of teachers in a child study project in Southeast Alabama. Evidence was presented suggestive of a positive change in teacher attitudes and improved classroom procedures.

Social Acceptance

A vast amount of research has been reported dealing with the problems of social acceptance and the development of social attitudes. Foshay (1951) reported an action research project on the development of children's social attitudes and the way these attitudes are learned in the classroom situation. His conclusions indicated that a major factor in the development of social attitudes is the child's acceptance by the group.

Brieland (1952) reported on a variety of the "guess who" techniques in the study of the children's social adjustment. He considered the nonselected child as meriting the greatest attention from a mental hygiene point of view. Bedoain (1954) found that social acceptance varies inversely with age in sixth grade classrooms; the underage pupils tended to enjoy higher status if underageness was moderate rather than extreme. Overageness and extreme underageness tended to be associated with low social acceptance. Teachers (Gronlund, 1953) tend to prefer children in the classroom who are the most preferred by their peers and to reject those least preferred by peers.

Miller and Stine (1951) reported on the relationship between social acceptance and certain psychoanalytic concepts. Anal-pregenital methods of relating to other children were found to be social assets during the latency period, while other pregenital trends were found to be socially unacceptable. Their results might be interpreted as factors related to controls exercised by parents during the child's early years. Baron (1951) reported on personal-social characteristics of fifth and sixth grade girls in relation to their sociometric scores. Low status girls in these grades indicated more frequently the presence of adverse emotionality and a sense of excessive environmental demands. They more often reported a feeling of failure on the elementary series of the Mental Health Analysis. Their comparisons with peers were unfavorable and their aspirations tended to be unrealistic and they showed greater dependency on teachers than did the higher status girls. Bonney and Powell (1953) reported that major personality differences exist between the highly accepted first grade children and the highly unaccepted first grade children. Among these were: (a) highly accepted children were more conforming to classroom requirements, (b) they smiled more frequently, (c) they were more cooperative in group projects, (d) they were less frequently alone in free play activity periods, and (e) they made more voluntary contributions to group activities. Gordon (1959) found that the child's behavior is determined largely by his self-concepts obtained from parents and how others view him. He interprets others' behaviors in terms of his own feelings and particular experiences are interpreted in relation to what he considers important. These results suggest that training in social skills would enhance the effectiveness of children in their peer group activities. The factor of conformity is one that teachers must deal with judiciously in order that extreme expectations will not occur.

One final note in regard to the characteristics of the unchosen is a point made by Wittenberg (1952) in regard to the stranger in the group. Social status as defined by the individual's participation in the various group activities may well be a poor indication of the actual social adjustment of the individual. Wittenberg's case study revealed the plight of the ambitious Negro girl in a white group; she achieved social status on criteria of participation in group activities but was miserable and alone when the more intimate social activities occurred.

Various attempts have been made to increase the social acceptance of children. Chittenden (1942) reported methods of training the child in particular skills which he could later use with his group and thereby gain in social ascendance. McClelland and Ratliff (1947) reported on the use of sociometry in promoting social adjustment of ninth graders. Follow-up sociometric testing showed fewer isolates or unchosen children. Elkins (1951), dealing primarily with techniques for identifying and treating emotional problems of children in a group setting, used sociometric tests, sociodrama, and diagnostic tests. Allowing children to structure the social situation in the classroom appeared to enhance their self-esteem and thereby improve social adjustment. Jennings (1948) used sociometric findings to help the unchosen expand their social tendencies through work groups and various activity groups. Immediate gains in social status as well as better understanding of individuals of different backgrounds and greater flexibility in social relationships were the outcomes. Scholastic over- and under-achievement seem to be related to the effectiveness of social approval as a reinforcer for the individual student (McDavid, 1959). It was found that the more effective social approval is as a reward, the greater its incentive value and the more likely the student is to work for higher marks. However, halo effect could account for a relationship between grades and responsiveness to social approval.

Hall (1951) reported an anecdotal study of an individual case designed to foster insight into the child's behavior, to provide evidence which would assist in changing a child's behavior, and to be of value in cooperative parent-teacher effort in working with the child.

These studies indicate the importance of social acceptance in the personal and school life of the child. There is encouraging evidence that social acceptance by classmates and teachers can be increased through positive reinforcement behavior on the part of the teacher.

Accuracy of Teacher Observations

Teacher observation of child behavior has been accepted with some distrust in psychological research. Gronlund (1955) reports on the relative ability of homeroom teachers to judge the social acceptability of pre-adolescents. Homeroom teachers who spend more time with children were more accurate in judging social acceptability of pre-adolescent pupils than were special subject teachers who were with the child only one hour each day. Special subject teachers tended to over-estimate the social acceptability of those pre-adolescent pupils they most preferred and to under-estimate the social acceptability of pre-adolescents they least preferred. Such findings point out the limitations of any teacher observational evidence; however, they do not discount the value of it. Olson (1949, 1959) has made wide use of the anecdotal recording technique in growth research pointing out that cumulative data gathered over a period of years give a rather accurate time perspective of the child's behavior and development. More often teachers' observational data are collected on individual children each labeled "problem child" with the purpose of gaining insight into the child's behavior and thereby enabling teachers to become better able to help the child.

Perkins (1957, 1958), reporting on a study made in Maryland of the self-concept of 251 children in fourth and sixth grade classrooms from seven elementary schools, found that teachers' perceptions of children's self-concepts are positively and significantly related to these children's self-concepts. Teacher participation in child study exerted the greatest influence on teachers' and peer groups' perceptions of the child's self-concept. Teachers who had completed the three-year in-service program sponsored by the University of Maryland's Institute for Child Study achieved significantly greater correspondence between their perceptions of children's self-concepts and these children's expressed self-concepts than did teachers who had never participated in child study. It was found, however, that teachers who are less accepting of self and others are more accurate and insightful in their perceptions of others' self-concepts than are teachers who are more accepting of self and others. This finding suggests the possible need for revision of current theory.

The classic educational study employing anecdotal records was the American Council on Education study (1945) in which teachers, making systematic anecdotal records over long periods of time and meeting regularly with consultants, gained insight and understanding both of the method of record keeping and of children's behavior. The extensive continuation of work of this nature by Prescott (1957), Brandt and Perkins (1956, 1957) and Perkins (1957, 1958) lends a considerable amount of support to the validity of teacher observation as a research method.

Changes in Teacher Attitude and Pupil Adjustment

The extensive and experimentally controlled work of Skinner (1954) adequately demonstrates the effect of exercising reinforcement of learning through environment manipulation. The child is more or less dependent on the teacher for reinforcing the desired aspects of behavior which the culture prescribes to be learned thus pointing up the importance of the teacher's behavior as a variable affecting children. Predictable effects on children of classroom control and social climate--whether autocratic, democratic, or laissez-faire--have been effectively demonstrated experimentally by Lippitt (1939, 1940). He found the teacher to be the principal factor in structuring and controlling the social situation. Anderson (1940) and Anderson and Brewer (1946) found that integrative behavior on the part of the teacher produced integrative responses from children, while dominative behavior on the part of the teacher evoked rigid, inflexible behavior in children. It should be noted that a person's associates tend to meet him with a type of behavior which he himself has adopted.

Reporting on a statistical study of achievement as affected by social values, Battle (1957) concluded that value patterns operate in the interaction of pupils and teachers. It was also concluded that the degree of similarity of teacher ideal and pupil patterns of values tends to be related directly to the level of pupil achievement as rated by teachers in terms of school marks.

Clark (1951) found significantly less "annoyance" behavior on the part of children when teachers possessed good mental health than when teachers had poor mental health. Senn (1955), reviewing practice and research in child development over the entire course of American history points out that today's child-rearing efforts differ markedly from those of earlier eras in terms of several dimensions among which are our greater permissiveness, our anxious concern about the individuality of the child, and our optimistic hopes that each child will emerge from the growing years a successful candidate for adulthood and eventually old age.

In teacher education the assumption is often made that a knowledge of child growth and development concepts will influence teacher attitudes which in turn will result in more effective classroom learning on the part of children. It has generally been found that when the roles and functions of teachers are student-centered, children respond and achieve favorably. McKeachie and his associates at the University of Michigan (1954) experimentally demonstrated small but significant differences in favor of student-centered classes. Improvement in adjustment as measured by the MMPI also favored student-centered groups. Findings indicated the need for improved teaching skills in order to prevent loss of teacher confidence through power engendered by teacher controlled methods. To this, Olson (1949, 1959) has added a growth philosophy which makes it imperative that teachers be student-oriented in order that students may function at their own varying rates of development.

It seems evident that the behavior and personality of the teacher is crucial in the determination of the adjustment of children he teaches. The teacher becomes the central figure in the classroom interactions and, therefore, must be seriously considered in any effort to produce any appreciable change in the behavior of the children involved.

Change in Pupil Behavior as a Result of Child Study

Charters (1952), in an earlier review of literature, summarized research on the teacher's role and teacher-pupil relationships. Cook (1956) using the Minnesota Teacher's Attitude Test, is representative of a number of recent efforts to measure teacher attitudes which, in a sense, combine attitudes with potential abilities. Gronlund (1950, 1953, 1955) found that teachers who had taken child development courses in college were superior to teachers who had not taken such courses in their empathic ability involved in perceptions of children's social status in the classroom. Social psychologists using the typical attitude measuring devices have been able to assess with little difficulty teacher's attitudes in many areas of education. Normally, this kind of research has been of an empirical nature in that practical ends are desired. Knoll's study (1934) evaluated the relationship between change in boys' attitudes as influenced by the attitudes of their teachers. Radical teacher attitudes were found to be more influential than conservative teacher attitudes. Ligon's Union College studies (1953, 1954, 1956) in character research demonstrated the marked change in children's attitudes which occurred when teaching was for attitude change. Holmlund (1952), on the basis of a thirty-two week in-service training program produced beneficial results in teachers' understanding of children's behavior in addition to beneficial changes in the teachers' ability to deal with children's behavior.

Research indicates that when teachers assume child-centered roles, pupil behavior changes. Cantoni (1955) reported greater progress, even through the college years, of pupils who received individual guidance and counseling.

Increasing social acceptance

Amundson (1954) described efforts to increase interpersonal relationships in high school groups with the aid of sociometric techniques. A secondary value of real importance was that the study itself caused teachers to be more observing of interpersonal relationships and the dynamics of group behavior.

Summary

This carefully selected review of literature suggests that teachers must function as mental hygienists but within the boundaries defined by their training and abilities. Teachers' attitudes can be measured and they can be changed. Improved understanding of children and of the task of education occurs when adequate programs are operating. The consultant is inevitably a part of this program. He is generally a psychologist or another person with special skills in working with children and with teachers. Child study programs of the workshop type appear to use consultants more effectively than do other kinds of study. Teacher participation in these programs can bring new skills to the classroom. In recent years the attention of educators has been increasingly directed to social development of children. The literature reveals many characteristics typical of the underchosen child as well as a variety of therapeutic techniques used by teachers to increase children's social acceptance. One of the most widely used techniques for enhancing teachers' understanding of children is that of observation and recording of child behavior. Anecdotal records have frequently become a standard part of the teacher's record system. Group work of teachers at the local level appears to be encouraged by local administrative officials almost on a national basis.

The current study was designed to help answer some of the problems unanswered in the educational and social aspects of child development and to test current theory as to the effectiveness of in-service education programs in changing teacher attitudes and classroom behavior.

PROCEDURE

Four topics are treated in this section of the report: (a) the selection of experimental and control groups, (b) the in-service training activities which were conducted during the six-year survey period, (c) the treatment which the experimental teacher group underwent during the Experiment, and (d) the evaluation of data. Since the experimental teachers on which the Survey is based constitute the experimental group in the Experimental phase of the study, only one section is devoted to the formation of groups.

Selection of Experimental and Control Groups

Teachers

Forty-six teachers who had participated at least two years during the period 1953-1959, expressed interest in participating in the intensive training program which constituted the experimental aspect of the study. These teachers constituted the experimental group. Each experimental teacher was paired with a control teacher who did not take part in the training program nor in the exploratory aspects of the program. Matching was done on the bases of: (a) age, (b) collegiate education, (c) years of teaching experience, (d) grade level, and (e) socio-economic environment of the school in which the teacher taught. In all there were forty-six pairs of matched teachers who were distributed by grade-level as follows: grade 1, 4; grade 2, 4; grade 3, 5; grade 4, 4; grade 5, 8; grade 6, 4; grade 7, 6; grade 8, 3; grade 9, 1; grade combination 4-5-6, 1; and grade combination 5-6, 2.

All teachers were female. Each member of a pair taught at the same grade level or in the same combination of grades. Each member of a pair was located in a school situated in a similar socio-economic environment. The experimental and control groups did not differ at the .05 level of significance on age, amount of collegiate training, and years of teaching experience. The median age of the experimental teachers was 47.2 years, and for the control teachers 45.7 years. The mean number of years of teaching experience for experimental teachers was 22.09, and for control teachers, 20.37

years. The majority of teachers held the bachelor's degree; three from each group had only three years of collegiate preparation; and eleven experimental teachers and nine control teachers held the master's degree.

Underchosen pupils

After one calendar month of observation, each experimental teacher used the data from two sociometric tests in selecting the underchosen pupil from her classroom. The underchosen child was one who received one choice or none on the work-play sociometric test and, in addition, had an IQ of 80 or above. In case of a tie, the pupil scoring lowest on the California Test of Personality was chosen.

The procedure for selecting the underchosen pupil from each of the control classrooms was the same as that used in selecting the underchosen pupils from the experimental classrooms except that two members of the project staff made the selection so that the control teacher would not be informed of the identity of the pupil from her classroom.

Classes of pupils

No attempt was made to match the experimental teacher's class of pupils with her control counterpart's class of pupils. The test performances of pupils of pairs of teachers were analyzed on a covariance basis to discount initial differences between classes.

Survey Treatment: In-Service Activities During the Six-Year Period 1953-1959

Previous activities related to this research covered a period of six years. Recognizing its responsibility to teachers in service, the Troy State College in May of 1953 initiated a project to foster greater cooperative effort on the part of schools in the area to study problems relating to children and instruction. As a result of a follow-up conference the following September plans were made to initiate a child study project. The avowed purpose of this in-service program was to encourage and implement the use in the classroom of increasing knowledge about the growth and development of children. The group involved teachers in six county and two city systems in the service area. All participated on a voluntary basis. No college credit was given, nor was there any outside financial support.

The first year was largely exploratory and the second year resulted in better orientation and increased interest on the part of participants. Unifying and guiding influence was furnished by a supervisor from the State Department of Education, a representative from the State Department of Health, Mental Hygiene Division, and by the spring, summer and fall conferences on the campus of Troy State College. Beginning with the third year, the College furnished a part-time coordinator in the person of the Director of the campus Laboratory school. This coordinator was able to visit each unit from three to eight times each year. This visitation with continued well-planned conferences in spring, summer, and fall on the campus served to further unify the group and give direction to the project.

The program of study became better focused the second year when each participating teacher, after much group discussion, agreed to select an isolate child, using a sociometric test. Later this pupil was defined as an underchosen child. It was assumed that the thorough study of one child would develop skills of study that would be helpful in working with children.

Since new teachers joined the group each year it became necessary after the second year to clearly define activities in terms of amount of participation. Accordingly the following criteria served as a frame of reference for the study program:

Group I

Definition - Those teachers who are entering the study for the first time and those who have never written or turned in an anecdotal record.

Activities -
1. Give sociometric tests in October, February, and April.
2. From sociometric data determine the child to be studied.
3. Write an anecdotal record of child to be studied.
4. Study: American Council on Education. Helping Teachers Understand Children. Washington, D. C., 1945.
5. Attend conferences on campus and other general meetings held in the community.

Group II

Definition - The participants who have written and turned in one anecdotal record.

Activities -
1. Give sociometric tests as in 1 above.
2. Write an anecdotal record.
3. Through study, broaden understanding of sociometric techniques in the guidance of children.
4. Extend record to include techniques used with the child being studied.
5. Study: Childhood Problems and the Teacher, by Charlotte Buhler, Henry Holt and Company, 257 Fourth Avenue, New York, N. Y. Fostering Mental Health in our Schools, 1950 Yearbook - A.S.C.D. National Education Association, Washington, D. C.
6. Attend conferences.

Group III

Definition - Those participants who have written and turned in two anecdotal records for two consecutive years.

Activities -
1. Through Study, broaden concepts of

sociometric techniques used in the guidance of children.

2. Analyze a given anecdotal record. (Write a report to be turned in at the spring conference.) An anecdotal record will be reproduced for each participant. Each participant will analyze the techniques used by the teacher as to:
    (1) Effectiveness or non-effectiveness,
    (2) Relationship of growth and development principles to the techniques used,
    (3) Better techniques that might have been used rather than the one indicated in the anecdotal material.
3. Attend conferences.

Group IV

Definition - Those participants who have analyzed an anecdotal record and participated in Group III.

Activities -
1. Through sociometric tests choose two children. (Highly chosen and underchosen)
2. Administer the following tests:
    a. Guess Who Test
    b. California Test of Mental Ability
    c. California Test of Personality
    d. California Achievement Test
3. Write a summary of your understandings of both children in the light of the above records.
4. Attend conferences.

Coordinators Group

Definition - Those persons in leadership roles such as supervisors, principals, and superintendents who are participating in the study.

Activities -
1. Coordinate the experiences participated in at the local level.
2. Distribute materials to appropriate persons.
3. Attend conferences.
4. Serve as consultant on progress being

made in the local systems and problems encountered at the local level.

The fifth and sixth years of work centered around those activities that were fairly well established during the fourth year. The sixth year was sustained partly by some optimism that the study would receive outside financial aid. A grant from the United States Office of Education was announced June 3, 1959 for the experimental evaluation of the project.

Conferences in the summer and the fall of 1959, therefore, concentrated on organizing and planning the study's continuation as a formal research project.

For a detailed account of the Survey and treatment, see Green (1958).

Experimental Treatment

This section describes the training program, i.e., the experimental treatment, to which the experimental group of teachers was subjected. The duration of the training program was one academic year and it occurred during the seventh year of the Troy program. The purposes of the program were (a) to cause the experimental teachers to become more intimately acquainted with knowledge about child growth and development and (b) to develop certain skills and understandings in the teachers that would enable them to use such knowledge in governing their classroom practices. Three conferences and nine study-group-meetings were held to aid in accomplishing these purposes. The three conferences were held at Troy State College, and all experimental teachers attended each of them. The study-group meetings were arranged on a county basis such that the experimental teachers from a particular county met nine times, at monthly intervals, during the school year. The field consultant attended the study group meetings in each of the counties. Proceedings of the conferences and study group meetings are presented later in this section.

Overview of purposes and procedures

Throughout the training program the following child growth and development principles were emphasized to take into account when determining classroom action.

1. Each individual has inherited certain characteristics that may or may not facilitate learning.
2. The environment influences the development of the individual.
3. Learning is continuous.
4. Growth is continuous.
5. Behavior is learned.
6. One's concept of himself influences learning.
7. Children learn at different rates.
8. Behavior is caused.
9. Emotional, social, physical, and intellectual growth patterns vary from individual to individual, within

each individual, and from age level to age level.

10. Emotional, social, and physical needs of children must be met as well as intellectual needs.
11. Children learn only when they are ready.
12. A sense of belonging is necessary for desired growth.
13. Emotion is a dynamic and integrative aspect of all behavior.
14. Each child's pattern of behavior has been created by the interaction of his abilities and experiences.
15. A philosophy of growth must take into account both the individual and the society in which he lives.
16. An organism's development is under the influence of a gradually unfolding design. Its powers increase through the growth that occurs with time. A basic error is the attempt to influence the time schedule by premature training.
17. Human beings need affection.
18. Human beings need to feel capable of meeting successfully a fair proportion of the situations they are called on to face.

This list is admittedly incomplete, for other principles were discussed; however, these were dwelt on particularly when establishing the activities included in the conferences and the study-group meetings.

Planned study of areas was established for the experimental teachers and was treated in the formal conferences and study programs. They were as follows:

1. Planned study of anecdotal records.
2. Direct teacher action with underchosen child, utilizing such procedures as remedial teaching, recognition of positive behavior, clinical conferences, and other techniques arrived at through discussion groups.
3. Direct dealing with other pupils in the group as they affect the underchosen child, utilizing such procedures as reassignment of work or play groups and classroom discussion on such topics as "Helping those who have few friends."
4. Planned parent-teacher conferences and home contacts.
5. Use of specialists through classroom visitation and counseling.

Planned activities also constituted part of the training program. The particular activities which became part of the training program were chosen on the basis of their potential for giving teachers an opportunity to apply their knowledge of child development principles and the knowledge gained from the planned study wiich is described above. The activities in which all experimental teachers engaged were as follows: the selection of an underchosen child for intensive study and remedial action in the classroom; the measurement of acceptance, achievement, and personality of all pupils in each teacher's classroom; the sociometric appraisal of the group structure of the classroom; the conduct of parent conferences; and the use of consultants.

The project staff decided not to appraise directly teacher achievement in any of the study areas, their knowledge of growth and development principles, or the skills with which they executed the planned activities. However, indirect measures were obtained of teacher attitude and reported classroom behavior. The staff chose to concern itself with changes in pupil behavior as the major outcome of the training program.

The following sections treat in detail the conferences in which all experimental teachers participated and the monthly study-group meetings which were held on a county basis.

Conferences

Three conferences were held during the school year. All experimental teachers attended each of these general meetings. These conferences were held to acquaint the experimental teachers with the research project, and in order that the teachers and consultants might attack cooperatively the problem of helping the underchosen children become integrated into their respective classroom groups.

The first conference occurred at the beginning of the school year; and was devoted partly to reviewing the over all project, especially those aspects of the project which were primarily the responsibility of the experimental teachers. The remainder of the conference was spent defining the importance of the teachers' role in the fall pupil testing program.

The second conference was held in October after the pupil test data had been scored and returned to the teachers and after a number of study-group meetings had been held. The conference topic "parent-teacher conferences" was selected by polling the county study groups to determine the most pressing problems they had encountered. A one-day meeting was scheduled. Project consultants presented the most recent research results on this topic to the assembled teachers. Group discussions were held. Reading lists were distributed to the teachers. Plans were made for each teacher to schedule several parent conferences partly as a means of developing skills necessary for such meetings and partly to collect information that would be useful in helping the underchosen pupil in the teacher's classroom.

The third one-day conference was held during the spring and the topic of it was "The Interpretation and Use of Available Test Data." The day was divided into three parts. The first part was devoted to a discussion by the consultants of tests used in the project and the use of the test data which had been collected. The consultants dealt particularly with the interpretation of personality tests and their relationship to the personal and social adjustment of pupils, discrepancies among test data and teacher judgments, and the use of test data in parent conferences. The second part of the day was devoted to small group, consultant led, discussions of problems in the use of test results. The final part of the day was devoted to further discussion of parent conferences. Role playing sessions were held and interviewing techniques were discussed and tried out in mock situations.

The topics dealt with at all the conferences were outgrowths of the work being done in the local situations and, of course, were directly related to the execution of the project. Subsequent to each conference, the conference topics were treated in greater detail in the study groups.

Local study groups

Experimental teachers and the project staff agreed that a planned study program was desirable as part of the experimental program if teachers were to increase their competencies. Consequently, a series of nine monthly meetings were scheduled in each of the counties in which experimental teachers were located. The project field consultant participated in each of the meetings in each of the counties. Each county group selected a leader and a recorder. The recorder kept an account of each meeting containing information about (a) major problem or issue considered, (b) an abstract of the discussion, (c) solutions, agreements, decisions, and recommendations about the problem or issue, (d) principles of growth and development relevant to the problem or issue, and (e) plans for the next meeting.

Since the objective for the local study groups was the completion of a planned program of study, the following topics were included in the year-long agenda of each study group: (a) choice of underchosen child, (b) study of individual child, (c) direct teacher action with the underchosen child, (d) interrelations of the underchosen child and the group, (e) parent-teacher interviews, and (f) use of consultants. A general account of how the study groups dealt with each of their areas of study follows.

Choice of the Underchosen Child for Intensive Study. The staff felt that the study program would be made realistic and vital for the experimental teachers if the study program were built around actual study of and first-hand work with a pupil. Thus, each teacher was to choose a child from her classroom for study during the course of the project. The pupil chosen for study was to be one who was underchosen by his classmates. Therefore, the initial study activity of the groups was devoted to a study of evaluative instruments useful in identifying such a pupil, how to administer such instruments, and how to interpret them, and, finally, the actual use and interpretation of these instruments.

To this end experimental teachers studied (a) the California Test of Personality appropriate to the grade-levels which they taught, (b) sociometric tests calling for pupil choices in work and friendship situations, and (c) a "Guess Who" test. Copies of instruments mentioned in (b) and (c) above appear in the Appendix. After careful study, these instruments were administered by each of the experimental teachers, with the assistance of the project staff, to the pupils in her classroom. (The results from the fall administration of these instruments constitute part of the data used to test the experimental hypotheses.) The data from these tests were then used by the teacher to select the underchosen child from her classroom. The underchosen pupil was one who received no choice or only one choice on the sociometric tests, but who had an I.Q. of 80 or greater. It was found that, as a group, the underchosen pupils achieved a mean percentile score of less than 50 on the California Test of Personality.

At the conclusion of this phase of the study program, attention was directed to methods of studying the underchosen pupil.

Study of the Individual Child. This phase of the local study-group program began after the underchosen pupil had been selected and continued, first concertedly and then intermittently, for the duration of the project. Because actual observation of child behavior is the basic requirement for child study, experimental teachers were required to write anecdotal records on the underchosen pupils in their classrooms. These records were then analyzed and evaluated by the entire study group. Teachers were also required to read certain textual materials: Helping Teachers Understand Children[1], Elementary School Children (Book of Cases)[2], and Understanding Group Behavior of Boys and Girls.[3] Consultants discussed with teachers, both in study groups and in the general conferences, matters dealing with the writing, analysis, and interpretation of anecdotal records. In addition, teachers read case histories of pupils written by project teachers and staff and by child development authorities.

Teachers, even after the earlier experiences, continued to find writing anecdotal records to be most difficult. First, they experienced difficulty in knowing what to observe; and, second, they had difficulty in committing to writing what had been observed. Each of these difficulties is discussed briefly below.

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[1] American Council on Education, Helping teachers understand children. Washington, D. C., 1945.

[2] Millard, C. V., & Rothney, J. W. The elementary school child. New York: Dryden, 1957.

[3] Cunningham and Associates, Understanding group behavior of boys and girls. New York: Teachers College, Columbia University, New York, 1951.

With regard to what incidents to describe in anecdotal records, the incidents which were initially chosen seemed to be based on the following considerations about the pupil: his success or failure in school work, the extent to which he was disturbing or helpful in the classroom, and his personal attractiveness or repulsiveness to the teacher. As teachers became more knowledgeable about child growth and development and as they acquired a greater sensitivity to the nature of a significant behavior, the incidents treated in anecdotal records changed noticeably in the direction of incidents related to the pupil's particular developmental tasks.

Teachers initially wrote about how they felt about the observed incident. Their records were typified by the implication that the pupil had a single, over-riding personality trait that governed all his behavior. There was a willingness to write an immediate explanation of the observed behavior in terms of such a predominant trait rather than to attempt to determine what psychological principles were suggested by the observed behavior and on the basis of these to develop an hypothesis about how to work constructively with the pupil. The increasing knowledge of how to write anecdotal reports is illustrated by the following list of categories of kinds of reports that were written from the beginning to the end of the year: evaluative statements, interpretative statements,

3

generalized descriptions, and specific descriptions.

Throughout the year teachers presented at study-group meetings the anecdotal records they had written. They were considered and evaluated by the entire group and recommendations were made that would lead to improvement in such records. In addition to changes that occurred in what was observed and how it was recorded, teachers gained other skills and understandings with regard to the study of child behavior. They established the habit of noticing exactly what the pupil did and of writing clear, concrete descriptions of the behavior and the situation in which it occurred. Furthermore, teachers became increasingly aware of what classroom incidents were worthy of note from the standpoint of the pupil's development. Then, too, the teacher seemed to become more aware of the pupil's day-to-day classroom behavior in terms of its relation to his classroom status and his developmental status.

Direct Teacher Action. As teachers analyzed the anecdotal material, they looked for evidences of rejection, evidences of acceptance, evidences of the child's negative or positive bahavior. When certain kinds of behavior seemed to be evident, the teacher attempted to establish the cause or causes for such behavior.

Recording behavior and interpreting behavior was found to be difficult; however, the most difficult task encountered was determining a course of action that would promote the child's integration into the group and in turn would increase the child's ability to perform socially, emotionally, and intellectually.

As each teacher worked with the underchosen child, she kept a record of the techniques used in helping the child make a better adjustment to group living. During the year participants listed the following techniques as ones being used in working with the underchosen child.

1. Recognition of positive behavior by praise.
2. Assignment to cooperative group tasks.
3. Teacher-chairmanned conference with underchosen child and peers.
4. Teacher-initiated acceptance of underchosen by peers in group play.
5. Group initiated invitation given to underchosen.
6. Individual initiated invitations given to underchosen child.
7. Group planned social behavior standards.
8. Teacher acceptance of underchosen child.
9. Activities planned to meet the needs of individual children.
10. Expectancies related to growth patterns of underchosen child.

11. Activities planned in light of ability of underchosen child.
12. Materials selected on basis of needs of individuals and the group.
13. Authoritarian prohibition of behavior.
14. Threats on part of the teacher.
15. Withdrawal of privileges.
16. Use of extrinsic rewards.
17. Physical punishment.
18. Moralizing on part of the teacher.
19. Shaming.
20. Forced apology.

It should be noted that items 1-12 are techniques positive in nature and items 13-20 are techniques that are negative in nature.

In the beginning of the study the negative techniques seemed to be used most often. As the teachers continued to observe, record, study, and analyze behavior, they seemed to recognize the lack of results obtained by the use of the negative techniques and attempted to put into practice those positive techniques which seemed to produce best results.

An attempt to evaluate the results was made in what must be considered a subjective manner. Each teacher was asked to express herself in written form as to ways she had changed in helping underchosen children.

The following list is typical of their subjective responses:

1. Viewing solution on a long-term basis.
2. Looking through children's, not adult's, eyes.
3. Recognizing worth as an individual.
4. Helping children solve own problems.
5. Punishment as least effective form of control.
6. Patterned treatment won't fit individual children.

An analysis of each anecdotal record indicated that the underchosen child in each case evidenced to a greater or lesser degree:

1. integrative behavior in harmony with school authority
2. tolerance behavior by peers toward underchosen
3. elimination of withdrawal behavior
4. acceptance by peers in free play
5. educational status improved
6. decreased isolation as shown by sociograms.

Underchosen Pupil and the Group. While the teachers studied and used techniques to be applied with the underchosen pupil, they became aware that these techniques could also be used with other pupils in the classroom. When the experimental teachers understood thoroughly that pupil behavior is a caused, not a random, phenomenon, they sought the causes of behavior for each of the pupils. Doing so enabled them to meet the needs of all pupils more adequately.

The sociometric data indicated the social structure of the classroom. Having this knowledge, the teacher was able to assign work and play groups in terms of pupil preferences, which had the apparent net effect of making the classroom activities more congenial and satisfying from the pupils' standpoint.

The experimental teachers felt that their increased knowledge of growth and development, which was fostered by earlier study-group topics, caused them to change the manner in which they worked with all pupils rather than only with the underchosen pupil.

Parent-Teacher Inverviews. The fifth aspect of the training program was studying the dynamics, purposes, and techniques of parent-teacher conferences and then conducting such conferences. Experimental teachers realized that the home and school must work cooperatively to provide an educational program that will lead to desired patterns of growth and development. Although teachers were aware of this principle, the parent conferences which they held were strained and formal; furthermore, there was a tendency for teachers to avoid such conferences despite the clear need for information which they would provide. Thus this aspect of the training program was intended to develop teacher skill and security in holding parent conferences in such a way that would provide information useful to parents and teachers in providing for pupils. This part of the study-group program consisted of four parts as suggested in the monograph Individual Parent-Teacher Conferences[1]. The first part consisted of a group discussion, by the teachers and the consultants, of the purposes for holding parent conferences. In this context it was emphasized that the primary objective of conferences of this kind was improving the pupil's adjustment and relations with others in the school. The second part dealt with exploring the feelings of pupils, parents, teachers, and administrators as they come into play, either directly or indirectly, in parent conferences. The third part consisted of role-playing sessions during which one teacher acted as parent and the other acted as teacher. Some of the role-playing sessions were planned in advance by the participants to exemplify certain principles and techniques; others were spontaneous. Immediately following each session, the observers, i.e., teachers who didn't participate in the simulated interview, analyzed what they had witnessed with respect to strengths and weaknesses of techniques employed, achievement of intended outcome, etc. After moderate skill and security had been developed by working through the program described above, the fourth part of the program was initiated. It consisted of each teacher's scheduling and holding at least one conference with the parent or parents of the underchosen child in her classroom. Subsequently the teacher wrote an anecdotal record of the conference which was read, analyzed, and commented on by other experimental teachers.

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[1] D'Evolyn, Kathryn. Individual parent-teacher conferences. New York: Bureau of Publications, Teachers College, Columbia University, 1945.

In addition to the four parts of the program described above, teachers were simultaneously engaged in two related activities. First, after discussion of the "what, when, where, and how" of interviews, teachers prepared a set of guides that would be useful in scheduling, holding, and evaluating parent interviews and conferences. The guides dealt with the following: (a) kinds of interviews (planned, incidental, group, and individual); (b) time of interview (on-school time, off-school time, early in the year, and late in the year); (c) making appointments (letter, telephone); (d) conducting the interview (getting started, between starting and stopping, closing); (e) suggestions to be made; (f) questions to be asked; (g) things to do and not to do; (h) record keeping; and (i) the use of records. Second, the interpretation and use of test results was emphasized again during study of parent-conferences inasmuch as it was felt that properly interpreted diagnostic test information would serve as useful background information during the parent conferences. It would provide data about the pupil that the parent should know of and that would be useful to the teacher in working cooperatively with the parent in making plans for the pupil. To this end teachers were instructed in the interpretation of results yielded by personality, achievement, and sociometric tests. They constructed profiles of test results for each of their pupils and attempted to make diagnoses from them. Teachers were instructed in the ways that such test data could be used to form groups within the class, to select appropriate learning materials, to evaluate promotion procedures, and to select fitting learning experiences.

Use of Consultants. As the experimental teachers became more understanding of the interrelationship of mental, physical, social, and emotional growth, they recognized that some pupils needed specialized services that they could not render. This understanding on their part set the stage for their final area of study, "The Use of Consultants."

Initially, the interrelationships of emotional, physical, social, and mental growth were pointed up. Then, the stage was set so that teachers would become aware that pupils required specialized help in addition to that which teachers could give. Teachers analyzed student problems and became aware that the services of the following specialists could be used advantageously - physicians, dentists, social workers, psychiatrists, psychiatric social workers, and welfare agency workers. Because most teachers were not aware of the extent to which such specialists were available, each study group surveyed the "human resources" that were available to them in their locality. Finally, attention turned to matters of how and when to refer pupils to these specialists and to the value of teachers seeking that kind of help from specialists that the teachers could use as preventive measures in dealing with the pupils.

Data Collection

Data with which to test the hypotheses included in both the Survey and Experimental aspects of the study were collected from control and experimental teachers and pupils twice during the school year. The first data were collected beginning in September of the school year, and end-of-the-year data were collected beginning in the middle of the following April. The staff planned orginally to collect the end-of-the-year data during the latter half of May but they were collected earlier because teachers threatened to terminate the school year earlier than officially scheduled to protest an aspect of the state's financial provisions for schools. Consequently, the shortened time between collection of the pre-test and post-test data reduces the chance of verifying the experimental hypotheses. The following sections describe the data that were collected from teachers and pupils, the test instruments that were used, and the conditions under which the data were collected.

Collection of teacher data

Two kinds of data were collected from control and experimental teachers - test data and their predictions of ranks some of their pupils would receive on particular tests.

Test Data. Early in September, the Minnesota Teacher Attitude Inventory, Form A[1], and the How I Teach: Analysis of Teaching Practices, Form A[2], were mailed to all control and experimental teachers for self-administration. Directions for self-administration, explanations of the tests, etc., were mailed with the test booklets. Both tests require relatively routine administration procedures; there was only slight risk of invalidity in administering the tests in this way. No teacher sought additional directions, and in later interviews none reported difficulty in ascertaining how to take the tests. This phase of the testing was completed prior to the end of the first month of school.

The MTAI provides a measure of one's attitude about the nature of pupil-teacher relations. The How I Teach inventory provides a composite measure of teaching practices, opinions about personality development, and judgments about questions dealing with child and adolescent behavior and training. The measures provided by each of these tests are highly related to the intended outcome, to change in the attitudes and classroom behavior of teachers, of the in-service training programs which were to be developed through the general study of child development concepts and the concerted study of an underchosen child from the classroom.

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[1] Cook, W. W., Leeds, C. K., & Collis, R. Minnesota teacher attitude inventory. New York: Psychological Corporation, 1951.

[2] Kelly, I. B., & Perkins, K. J. How I Teach: analysis of teaching practices. Minneapolis: Educational Test Bureau, 1955.

Both of these instruments were re-administered to all teachers, experimental and control, during the latter part of the following April. No teacher was informed of the scores received on the first administration of the tests, nor did the project staff discuss these tests with the teachers at any time during the investigation.

Predictions. In addition to the test data which were collected from control and experimental teachers, each teacher was asked to predict which of her pupils would score high and low on certain tests. These data were collected to determine, first, if there were differences between control and experimental teachers with regard to their accuracy in identifying those of their pupils who were high in number of choices on a sociometric device, low in number of choices on the sociometric device, high in adjustment and low in adjustment, and, second, determine for experimental teachers whether a positive relationship exists between the accuracy of their predictions and the numberof years they had participated in earlier child development extension programs. The procedures which were used in the collection of these nominations are described in the subsequent paragraph.

Shortly after the beginning of the school year all teachers were advised by mail of the phase of the data collection. They were informed that four sets of nominations or predictions would need to be made. Each was asked to nominate, in rank order (1) the five students from her classroom who would receive the most choices on a sociometric device, which is described later; (2) the five students who would receive the fewest choices on the sociometric; (3) the five students who would receive the highest total adjustment scores on the California Test of Personality; and (4) the five students who would receive the lowest adjustment scores as revealed by the total score on the same test. Although five nominations in each category were requested, only three were needed for research purposes. The additional two were requested to provide some margin of safety in case nominees became school leavers during the year the study was in progress. It was the hope, at the time these data were collected, that the analyses would be confined to pupils who had been in a particular classroom for the full duration of the study.

The teachers were required to make their nominations on the twenty-first day that school was in session. In other words, teachers had twenty class days to observe their pupils prior to making their nominations. The teachers were instructed to mail their nominations to the staff office. If the nominations were not received within three days after the due day, teachers were reminded, either by telephone or by mail, or both, to send them in immediately.

Since the pupil data collection began immediately after the nominations were received, there was no opportunity for the teacher to refer to results of such tests when making their nominations. Although teachers were requested to make their nominations without referring to the previous test records of pupils, there was no way to prevent them from doing so if such data were available to them. It is the feeling of the staff that the vast majority, if not all, teachers made their predictions solely on the bases of their classroom observations of the pupils.

Collection of Pupil Data

Pupils in each of the experimental and control classrooms were tested at the beginning and at the end of the school year. Each pupil was administered the appropriate form of the following tests at the beginning and at the end of the year:

California Achievement Tests, Complete Battery[1], and the California Test of Personality[2]. The same form was administered at both times on the assumption that the effect of specific memory on the spring test results would be negligible.

These tests were administered to provide data bearing on a number of hypotheses generally dealing with changes in teacher attitude and knowledge as a function of the training program, and anticipated concomitant changes in pupil adjustment and achievement beyond normal expectancy during the school year.

Teachers were instructed in the procedures of test administration at the general meeting and the topic was discussed at local meetings. For those teachers who felt unqualified to administer the tests, the project staff did so in their behalf. A member of the project staff supervised all testing and held short private conferences with most teachers immediately prior to the period of test administration. The testing schedule was arranged, i.e., the order of tests and the testing duration each day, so that it would be uniform for a pair of control and experimental teachers. By and large the testing was uneventful and no known irregularities occurred that were not corrected immediately.

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[1] Tiegs, E. W., & Clark, W. W. California achievement tests, Los Angeles: California Test Bureau, 1957. The appropriate levels of Form X were used.

[2] Thorpe, L. P., Clark, W. W., & Tiegs, E. W. California test of personality, Los Angeles: California Test Bureau, 1953. The appropriate levels of Form AA were used.

The sociometric data were collected at the beginning of the year at the same time as were the standardized test data. The sociometric device was quite simple, merely requesting the pupil to list the three pupils in class with whom he would like to work and the three pupils with whom he would like to play. To facilitate the choices of pupils in the lower grades all names were written on the chalkboard. In the lowest grades, choices were made orally by the pupil to the teacher who recorded the choices. Those pupils who were absent at the time the sociometric was administered made their choices later and their choices were included in the study.

ANALYSES OF DATA

Analyses of Survey Data

Hypotheses 1-5

The first group of hypotheses related to classroom behavior of control and experimental teachers. Hypothesis 1 asserted that no significant differences existed between mean scores made by experimental teachers and control teachers on the MTAI and the Purdue at the beginning of the experimental year. A t test was performed upon paired mean raw scores on each of these two instruments. The experimental MTAI mean of 145.74 was found to differ significantly from the control MTAI mean of 120.02. The Purdue mean score of 29.24 for the experimental group differed significantly from the Purdue mean score of 25.17 for the control group. Table 1 contains the data pertinent to these findings.

Table 1

Analysis of Variance of Fall and Spring Scores Made by Control and Experimental Teachers on the Minnesota Teacher Attitude Inventory

Source	df	MS_x	MS_y	F_x	F_y
Between means	1	15211.83	7061.26	10.65**	9.38**
Within groups	90	1428.82	753.16		
Total	91				

**Significant at .01 level

Hypotheses 2 and 3 dealt with the accuracy with which teachers identified the three least-chosen and the three most-chosen pupils by classroom peers. Accuracy of prediction was expressed as a coefficient derived by means of the following procedure.

A total squared discrepancy value was obtained by squaring the difference between the rank assigned to each of three pupils by the teacher and the rank found by means of a sociometric test. The sum of these squared deviations was then divided by a value obtained by the formula

$(N-1)^2 + (N-3)^2 + (N-5)^2$, in which N constituted the total number of pupils in the class, thus taking varying class sizes into account. The resulting quotient was subtracted from unity, yielding an accuracy score.

The accuracy scores of experimental and control teachers were subjected to variance analyses. These tests, results of which are contained in Tables 2 and 3, showed no significant differences at the .05 level between the teacher groups in mean accuracy with which least-and most-chosen children were identified. Obtained means showed that experimental teachers were slightly more accurate in identifying least-chosen pupils than were control teachers. The respective experimental and control mean accuracies in identifying least-chosen pupils were .929 and .912. The mean accuracies in identifying most-chosen pupils were .947 and .951 for experimental and control teachers, respectively. Both groups were more successful in identifying most-chosen pupils than in identifying least-chosen pupils.

Table 2

Analysis of Variance of Accuracy With Which
Control and Experimental Teachers Identify
Least-Chosen Children

Source	df	Sum of Squares	Mean Square	F
Between means	1	.0066	.0066	.73
Within groups	90	.8122	.0090	
Total	91			

Table 3

Analysis of Variance of Accuracy With Which Control and Experimental Teachers Identify Most-Chosen Children

Source	df	Sum of Squares	Mean Square	F
Between means	1	.0005	.0005	.14
Within groups	90	.3167	.0035	
Total	91			

In treating Hypotheses 4 and 5, comparisons were made of experimental and control teacher accuracy in identifying the three lowest-scoring and the three highest-scoring pupils on the CTP. Variance analyses revealed no significant differences between experimental and control means of .812 and .816, respectively, relating to low-scoring children and between means of .838 and .824, relating to high-scoring children. Both groups were more successful in identifying high-scoring pupils than in identifying low-scoring pupils. Results of analyses are summarized in Tables 4 and 5.

Table 4

Analysis of Variance of Accuracy With Which Experimental and Control Teachers Identify Lowest Scoring Pupils on the California Test of Personality

Source	df	Sum of Squares	Mean Square	F
Between means	1	.0004	.0004	.02
Within groups	90	2.3333	.0259	
Total	91			

Table 5

Analysis of Variance of Accuracy With Which Experimental and Control Teachers Identify Highest Scoring Pupils on the California Test of Personality

Source	df	Sum of Squares	Mean Square	F
Between means	1	.0049	.0049	.27
Within groups	90	1.6113	.0179	
Total	91			

Hypotheses 6-9

These hypotheses related to the number of years spent by experimental teachers in the in-service program and their accuracy in identifying, after one month of school, the least- and most-chosen children, as determined by a sociometric test, and the least- and most-socially adjusted children, as measured by the CTP.

All experimental teachers were grouped according to number of years spent in the in-service program. Group I consisted of those who had participated for a period of two years, Group II those who had taken part three years, and Group III, four or more years. Data on length of participation and prediction accuracy, as described above, were subjected to analysis of variance and t tests of differences between all possible pairs of means.

Variance analysis of Hypothesis 6, which dealt with relationships between years of participation and accuracy in identifying the three most-chosen children, revealed no significant differences. One-tailed t tests indicated that the mean of .966 for Group III differed from the mean of .929 for Group I by a significant amount. No other differences were found to be significant.

Table 6

Experimental Teacher Accuracy in Identifying Most-Accepted Pupils, Grouped According to Number of Years in In-Service Training Program

	Group 1*	Group 2	Group 3
N	16	14	16
Mean	.92937	.94500	.96625
SD	.0765	.0584	.0292

*Group 1 consisted of those teachers who participated in the in-service training program 2 years, Group 2 those who participated 3 years, and Group 3 those who participated 4 or more years.

Table 7

Analysis of Variance of Prediction Accuracy Scores of Experimental Teachers Grouped According to Number of Years in In-Service Training Program

Source	df	Mean Square	F
Among means	2	.00550	1.63
Within groups	43	.00337	
Total	43		

Similar findings were observed relative to Hypothesis 7, which dealt with length of in-service participation and accuracy in identifying least-chosen children. Analysis of variance did not show significant differences among the group means.

Table 8

Experimental Teacher Accuracy in Identifying Least-Accepted Pupils, Grouped According to Number of Years in In-Service Training Program

	Group 1*	Group 2	Group 3
N	16	14	16
Mean	.90000	.96428	.92812
SD	.1193	.0282	.0912

*Group 1 consists of teachers who participated in the in-service training program for a period of 2 years, Group 2 those who participated 3 years, and Group 3 those who participated 4 or more years.

Table 9

Analysis of Variance of Prediction Accuracy Scores of Experimental Teachers Grouped According to Number of Years in In-Service Training Program

Sources	df	Mean Square	F
Among means	2	.01550	1.91
Within groups	43	.00810	
Total	45		

Hypotheses 8 and 9, relating to length of in-service training and accuracy in identifying highest- and lowest-scoring pupils on the CTP, were not supported by variance analyses. The greatest difference actually obtained between a pair of means was that between Group I and II on identification of low-scoring pupils. Group I achieved a mean accuracy of .849 and Group II, .786.

Table 10

Analysis of Variance of Teacher Accuracy in Identifying Most Socially Adjusted Pupils as Measured by California Test of Personality

Source	df	Mean Square	F
Among means	2	.00065	.04
Within groups	43	.01490	
Total	45		

Table 11

Experimental Teacher Accuracy in Identifying Most Socially Adjusted Pupils as Measured by California Test of Personality; Grouped According to Number of Years in In-Service Training Program

	Group 1*	Group 2	Group 3
N	16	14	16
Mean	.8356	.8435	.8356
SD	.1303	.1125	.1216

*Group 1 consists of teachers who participated in the in-service training program for a period of 2 years, Group 2 those who participated 3 years, and Group 3 those who participated 4 or more years.

Table 12

Analysis of Variance of Teacher Accuracy in Identifying Least Socially Adjusted Pupils as Measured by the California Test of Personality

Source	df	Mean Square	F
Among means	2	.0179	.58
Within groups	43	.0307	
Total	45		

Table 13

Experimental Teacher Accuracy in Identifying Least Socially Adjusted Pupils as Measured by the California Test of Personality: Grouped According to Number of Years in In-Service Training Program, Grouped According to Length of In-Service Participation

	Group 1*	Group 2	Group 3
N	16	14	16
Mean	.8493	.7864	.7956
SD	.1428	.1956	.1854

*Group 1 consists of those teachers who participated in the in-service training program 2 years, Group 2 those who participated 3 years, and Group 3 those who participated 4 or more years.

Analyses of Experimental Data

Hypothesis 1

The first experimental hypothesis related to the extent of change in attitudes, as measured by the MTAI and the Purdue, of both the experimental and the control teachers from fall to spring test administrations. Covariance analyses failed to show significant differences between the two groups on either the MTAI or the Purdue. The MTAI adjusted mean spring scores for experimental and control teachers were 167.39 and 165.05. On the Purdue, adjusted spring means were 28.66 and 27.01, respectively. Variance analyses revealed, however, that the raw score means of experimental teachers exceeded to a significant extent those of control teachers in the fall and in the spring on both the MTAI and the Purdue. Tables 1, 14, 15, and 16 contain data relevant to these analyses.

Table 14

Analysis of Covariance of Fall and Spring Minnesota Teacher Attitude Inventory Scores of Experimental and Control Teachers

Source	df	Adjusted y^2	Mean Square	F
Between means	1	117.30	117.80	.45
Within groups	89	23201.43	261.59	
Total	90			

Table 15

Analysis of Variance of Fall and Spring Scores of Control and Experimental Teachers on the Purdue Teacher Examination

Source	df	MS_x	MS_y	F_x	F_y
Between means	1	380.10	600.27	9.67**	12.72**
Within groups	90	39.32	47.20		
Total	91				

**Significant at .01 level

Table 16

Analysis of Covariance of Fall and Spring Purdue Teacher Examination Scores of Experimental and Control Teachers

Source	df	Adjusted y^2	Mean Square	F
Between means	1	57.23	57.28	2.99
Within groups	89	1702.76	19.13	
Total	90			

Further analysis was effected upon MTAI data in which scores expressed in percentiles were used. Actual gain of each teacher was expressed as a proportion of possible gain in order to take into account the fact that some teachers scored much higher on the first test than, and could not possibly show as much progress as, other teachers. A t test of the difference between mean proportionate gains of experimental and control teachers revealed that the means of 58.83 and 40.35, respectively, did not differ significantly.

Hypotheses 2-7

Analysis of Hypothesis 2 yielded results leading to the rejection of the hypothesis of no difference between mean proportions of choices of experimental underchosen pupils by their classroom peers on the fall and spring sociometric devices. Each child was limited to two choices. In order to take into account varying class sizes, the frequency of choices received by each underchosen child was divided by the total number of pupils in the class. The quotient was then multiplied by one hundred to increase the magnitude of values used in computations. The increase from .98 to 2.26, the significance of which was tested by t test for correlated samples, was found to be significant at the .01 level. When the same procedures were applied to control underchosen children also, a difference significant at the .01 level was found between the fall mean of

.46 and the spring mean of 1.39.

Table 17

Test of Significance of Difference in Mean Classroom Peer Acceptance between Fall and Spring of Experimental Underchosen Children

Statistic	Test Administration		t
	Fall	Spring	
Mean SD	1.457 1.906	3.587 2.146	13.10**

**Significant at .01 level

Hypothesis 3 related to experimental and control underchosen pupil frequency of peer choices at the end of the experimental year. When spring results were adjusted for fall differences, the experimental mean of 3.12 and control mean of 2.61 were found to differ to a nonsignificant extent.

Table 18

Adjusted Spring Means of Experimental and Control Pupil Frequency of Peer Choices

Statistic	Group		Difference Between Means	Difference Required for Significance at .05
	Experimental	Control		
Adjusted Spring Mean	3.12	2.61	.51	3.94

Hypothesis 4 dealt with experimental and control underchosen pupil gain in achievement, as measured by the CAT. A *t* test revealed that the mean gain of 16.67 by the experimental group did not exceed the mean gain of 12.61 by the control group sufficiently to prove significant.

Table 19

Difference between Experimental and Control Underchosen Children in Gain in California Achievement Test Performance from Fall to Spring Test Administration

Statistic	Group		t
	Experimental	Control	
Mean gain SD	16.67 24.38	12.61 23.41	.32

Hypothesis 5 asserted that no significant differences existed at the end of the year between mean CAT scores of experimental and control underchosen children, stratified according to grade. CAT scores, expressed as percentiles, were categorized according to grade level, resulting in eight paired sets of data, experimental pupil scores and control pupil scores constituting the paired sets at each grade level. Eighth- and ninth-grade data were pooled since there was only one pair of underchosen pupils at the ninth-grade level. Experimental and control spring scores, adjusted for effects of differential fall performances, differed nonsignificantly at all grade levels. Data resulting from analyses of Hypothesis 5 are summarized in Table 20.

Table 20

Analysis of Spring Performance on the California Achievement Tests Adjusted for Differential Fall Performance of Experimental and Control Underchosen Children

Grade	Adjusted Mean Squares for Spring Scores		F
	Between Means	Within groups	
1	569.66	630.51	.90
2	12.53	77.67	.16
3	19.30	224.85	.09
4	47.21	715.24	.07
5	404.08	286.55	1.41
6	169.89	584.23	.29
7	3.26	310.26	.01
8&9	498.63	281.81	1.77

In testing Hypothesis 6, comparisons were made of mean gains on the CTP from fall to spring test administrations of all experimental and all control underchosen children. A *t* test of the difference revealed that the greater mean gain of the control group was not significantly different from that of the experimental group.

Table 21

Difference in Mean Gain in Social-Emotional Adjustment as Measured by the California Test of Personality between Experimental and Control Underchosen Children

Statistic	Group		t
	Experimental	Control	
Mean gain	5.609	7.478	.33
SD	22.62	23.92	

Covariance analysis, required by Hypothesis 7, showed that adjusted CTP spring scores of experimental and control groups were not significantly different. The experimental group scored significantly higher on both the fall and the spring tests.

Table 22

Analysis of Covariance of Fall and Spring California Test of Personality Scores of Experimental and Control Underchosen Children

Source	df	Adjusted y^2	Mean Square	$F_y{}^2$
Between means	1	142.55	142.55	.28
Within groups	89	46008.57	516.95	
Total	90			

Table 23

Analysis of Variance of Fall and Spring Scores Made by Control and Experimental Underchosen Children on the California Test of Personality

Source	df	MS_x	MS_y	F_x	F_y
Between means	1	6921.79	5824.17	16.81**	7.77**
Within groups	90	411.78	749.61		
Total	91				

**Significant at .01 level

Hypotheses 8-9

The data used in testing Hypothesis 8 consisted of pupil CTP scores expressed as differences between spring and fall percentiles, categorized according to teacher MTAI difference scores. Group I consisted of the CTP difference scores of pupils whose teachers exhibited an MTAI difference of 19 or less. Group II included pupils whose teachers changed from 20 to 39 percentile points, and Group III, 40 or more points. Variance analysis of grouped data yielded results that supported the null hypothesis.

Table 24

Change in California Test of Personality Scores of all Underchosen Pupils from Fall to Spring Grouped According to Change in Teachers' *Minnesota Teacher Attitude Inventory* Scores.

	Group 1* 19 or less	Group 2 20-39	Group 3 40 or more
N	37	32	23
Mean	11.4864	9.7137	16.3043
SD	23.47	23.10	28.17

*All teachers were categorized according to difference in fall and spring MTAI scores, as indicated in column headings.

Table 25

Analysis of Variance of Underchosen Pupil Change in Performance on the California Test of Personality Categorized According to Group Changes in Teacher MTAI Scores

Source	df	Mean Square	F
Among means	2	300.94	.50
Within groups	89	604.77	
Total	91		

Hypothesis 9 dealt with the relationship between teacher change in MTAI and underchosen pupil change in CAT. The data were categorized and treated in the same manner as MTAI and

CTP scores relative to Hypothesis 9 above. Analysis of variance revealed nonsignificant differences among the group means.

Table 26

Change in California Achievement Test Scores of all Underchosen Pupils from Fall to Spring Grouped According to Change in Teacher MTAI

	Group 1* 14 or less	Group 2 15-29	Group 3 30-44	Group 4 45 or more
N	18	26	17	31
Mean	.93	.00	1.01	.71
SD	.56	.76	.65	.60

*Groups refer to teacher MTAI score-gain intervals

Table 27

Analysis of Variance of Underchosen Pupil Change in Performance on the California Achievement Test Categorized According to Grouped Changed in Teacher MTAI Scores

Source	df	Mean Square	F
Among means	3	.4133	.97
Within groups	88	.4242	
Total	91		

Hypotheses 10-13

The last group of hypotheses involved the effects of concerted teacher study of underchosen children upon the achievement and social-emotional adjustment of all pupils. Data were expressed in percentiles.

Hypothesis 10, relating to experimental and control pupil

CAT performances, was treated by covariance analyses of fall and spring data of the two groups, stratified according to grade level. Significant differences were found between experimental and control groups in Grades 1 and 3. The adjusted spring mean of 86.25 for the first-grade control group was found, by *t* test, to be significantly higher than the corresponding mean of 74.52 for the experimental group. The experimental third-grade mean of 71.45 was significantly higher than the control mean of 66.37. Variance of first-grade fall data were found by simple *F* test to be heterogeneous. Variance of third-grade fall data were homogeneous.

Hypothesis 11 dealt with the difference between mean performances of all experimental and all control children on the CAT. Covariance analysis showed that a difference significant at the .05 level existed between adjusted spring scores. A *t* test showed, however, that the adjusted experimental spring mean of 68.47 did not differ significantly from the adjusted control mean of 66.38. A simple *F* test indicated that the variances of the fall sets of data of the two groups were not homogeneous.

Table 28

Analysis of Fall and Spring and Adjusted Spring California Achievement Test Scores of Control and Experimental Pupils According to Grade Level

Grade Source of Variation	Analysis of Variance of X and Y#					Covariance Analysis		
	df	MS_x	MS_y	F_x	F_y	df	$MS_{y.x}$	$F_{y.x}$
1 Bet. means	1	16551	15090	52.76**	27.90**	1	6049	11.67**
Within groups	218	313.73	540.85			217	518.45	
2 Bet. means	1	415	193	.60	.32	1	1	.006
Within groups	222	695.22	592.26			221	177.35	
3 Bet. means	1	1880	6505	2.57	8.68**	1	1785	9.42**
Within groups	278	730.37	737.32			277	189.52	
4 Bet. means	1	2181.33	5.48	1.87	.008	1	510	1.62
Within groups	343	1166.47	650.72			342	315.60	
5 Bet. means	1	1064	2704	1.19	3.41	1	2769	3.74
Within groups	466	895.72	792.72			465	739.31	
6 Bet. means	1	2031	1538	2.08	1.55	1	10	.06
Within groups	273	978.03	989.92			272	163.05	
7 Bet. means	1	2799	380	3.10	.84	1	481	2.50
Within groups	318	901.22	1052.13			317	192.61	
8 Bet. means	1	134	780	.15	.66	1	258	1.44
Within groups	141	874.94	1186.03			140	173.67	
9 Bet. means	1	612	2006	.81	2.25	1	361	3.95
Within groups	27	756.81	391.67			26	91.31	

#X refers to fall scores and Y to spring scores
**Significant at the .01 level

Table 29

Analysis of Covariance of Fall and Spring California Achievement Tests Scores of All Experimental and All Control Children

Source	df	Adjusted Mean Square for Y	F
Between means	1	6139.39	15.30**
Within groups	2293	404.59	
Total	2294		

**Significant at .01 level

Table 30

Test of Significance of Difference between Adjusted Spring Means of Control and Experimental Pupils on California Achievement Tests

Adjusted Y-Means		Difference Between Adjusted Y-Means	t
Control	Experimental		
66.3779	68.4679	2.0900	1.63

Hypothesis 12 involved comparisons of experimental and control pupil CTP scores stratified according to grade level. Analysis of covariance showed a significant difference between adjusted spring scores of fourth-grade experimental and control pupils. The adjusted spring mean of 113.61 for the control group was shown by t test to be significantly different from the mean of 106.84 for the experimental group. A simple F test showed that the variances of fall experimental and control data were homogeneous.

Table 31

Analysis of Fall and Spring and Adjusted Spring California Test of Personality Scores of Control and Experimental Pupils According to Grade Level

Grade	Source of Variation	Analysis of Variance of X and Y					Analysis of Covariance		
		df	MS_x	MS_y	F_x	F_y	df	$MS_{y.x}$	$F_{y.x}$
1	Bet. means	1	49	318	.30	2.34	1	332	3.68
	Within groups	218	163.53	136.13			217	90.08	
2	Bet. means	1	1892	556	9.49**	5.67*	1	83	1.08
	Within groups	222	199.39	97.98			221	76.98	
3	Bet. means	1	110	682	.74	3.13	1	380	2.37
	Within groups	279	147.54	217.91			278	160.42	
4	Bet. means	1	140	2750	.39	5.50*	1	2821	8.80**
	Within groups	325	354.58	499.51			324	320.66	
5	Bet. means	1	29	670	.07	1.58	1	688	3.66
	Within groups	466	390.37	423.00			465	187.87	
6	Bet. means	1	1418	2610	3.69	6.31**	1	630	3.10
	Within groups	273	384.64	383.25			272	203.16	
7	Bet. means	1	37	247	.25	.64	1	77	.41
	Within groups	318	352.56	382.46			317	188.06	
8	Bet. means	1	266	1	.68	.002	1	148	.87
	Within groups	141	390.08	424.64			140	170.06	
9	Bet. means	1	783	50	2.12	.15	1	183	1.35
	Within groups	27	369.63	341.56			26	135.77	

*Significant at .05 level
**Significant at .01 level

In testing Hypothesis 13, comparisons were made of mean performances of all experimental and all control pupils on the CTP. Covariance analysis showed a significant difference between adjusted spring scores of experimental and control groups. However, t test of adjusted spring means supported the null hypothesis. A simple F test indicated homogeneity of fall experimental and control variances.

Table 32

Analysis of Covariance of Fall and Spring CTP Scores of All Experimental and All Control Pupils

Source	df	$SS_{y.x}$	$MS_{y.x}$	$F_{y.x}$
Between means	1	2393.63	2393.63	6.76**
Within groups	2283	808166.95	353.99	
Total	2284			

**Significant at the .01 level

Table 33

Test of Significance of Difference between Adjusted Spring Means of Control and Experimental Pupils on California Test of Personality

Adjusted Y-Means		Difference Between Adjusted Y-Means	t
Control	Experimental		
55.4599	54.6667	.7932	.72

Subjective Comments on the Survey Period

In addition to the objective data provided by standardized measuring devices, subjective information was obtained by the field consultant relative to teacher attitude and behavior changes. As each experimental teacher worked with the underchosen child, she kept a record of the technique used in attempting to assist the child in adjusting to group activities. During the experimental year, the teachers listed the following techniques used in working with underchosen children.

1. Recognition of positive behavior by praise
2. Assignment to cooperative group tasks
3. Teacher chairmanned conference with underchosen child and peers.
4. Teacher initiated acceptance of underchosen by peers in group play
5. Group initiated invitation given to underchosen child
6. Individual initiated invitations given to underchosen child
7. Group planned social behavior standards
8. Teacher acceptance of underchosen child
9. Activities planned to meet the needs of individual children
10. Expectancies related to growth patterns of underchosen child
11. Activities planned in light of ability of underchosen child
12. Materials selected on basis of needs of individuals

and the group

13. Authoritarian prohibition of behavior
14. Threats on part of the teacher
15. Withdrawal of privileges
16. Use of extrinsic rewards
17. Physical punishment
18. Moralizing on part of the teacher
19. Shaming
20. Forced apology.

At the beginning of the study the negative techniques, 13 through 20, seemed to be employed most often. As the teachers continued to observe, record, and analyze behavior of the children, they seemed to recognize the lack of desirable results obtained by the use of negative techniques and attempted to utilize positive techniques which seemed to produce best results.

An attempt was made to evaluate the results subjectively. Each teacher was asked to relate in written form the ways in which she had changed in helping underchosen children. The following are typical of the teachers' responses.

1. Viewing solution of behavior problems on a long-term basis
2. Looking through children's, not adults', eyes
3. Recognizing worth as an individual

4. Helping children solve own problems

5. Punishment as least effective form of control

Subjective information obtained through examination of anecdotal records indicated that underchosen children increasingly exhibited or received the following as the experimental year progressed:

1. Integrative behavior in harmony with school authority
2. Tolerance behavior on the part of classroom peers
3. Reduction of withdrawal behavior
4. Acceptance by peers in free play
5. Decreased isolation as shown by sociograms.

The field consultant observed that as teachers studied and employed techniques recommended for use in working with underchosen pupils they became aware of the usefulness of these techniques in working with other children as well. Using sociometric data, teachers were able to assign work and play groups in terms of pupil preferences, thereby increasing congeniality of classroom activities.

Interpretations

Hypotheses relating to the project were tested in terms of data obtained from matched pairs of experimental and control teachers and their pupils. Control teachers served as a reference group in determining the effectiveness of the in-service training program participated in by experimental teachers.

The first group of hypotheses dealt with teachers' behavior. From treatment of the relevant data, the following observations appear to be warranted.

The higher initial and final mean MTAI and Purdue scores of experimental teachers imposed a lower ceiling upon measured improvement than was true of control teachers. An attempt was made to take this fact into account by treating data based upon proportions of possible gains rather than actual percentile point gains. The significant superiority of experimental teachers on the MTAI and the Purdue at the beginning of the experimental year was indicative of the efficacy of the survey aspect of the training program in producing changes in teacher attitudes of acceptance and objectivity in dealing with children. The significantly higher spring performance showed that the superiority was maintained through the experimental year. The nonsignificant difference in gain exhibited by the two groups revealed, however, that the experimental teachers did not improve to any greater extent than the control teachers during the last year of the project. Thus, significant changes occurred during the six-year interval but did not occur during the seven-month period of the experimental year. Subjective evaluation of teacher behaviors at the beginning and the end of the program indicated a degree of translation of child development concepts into classroom practices. The findings are consistent with those reported by Anderson and Zimmerman (1950), Brandt and Perkins (1956, 1957), Prescott (1957), and Perkins (1958). These investigators found positive teacher attitude changes over two- to three-year periods.

The higher mean score of the experimental group in identifying least-chosen children and the lower mean score in identifying most-chosen children did not differ significantly from control teacher accuracies. It was therefore concluded that the training program did not equip experimental teachers with skills contributing to superior accuracy in identifying least- and most-chosen children. These results are contrary to those obtained by certain other investigators. Studies by Prescott (1957), Brandt and Perkins (1956, 1957), and Perkins (1957, 1958) showed positive relationships between pupil acceptance by peers and teacher judgments of such acceptance. The evidence supported the assumption of the validity of teacher judgments as a useful research method. Gronlund (1950, 1953, 1955) found a significant difference between teachers who had and teachers who had not taken college courses in child development in perceiving pupils' social status.

Experimental and control teacher groups did not differ significantly in accuracy of identifying least- and most-adjusted children, as measured by the CTP. It was concluded that the training program did not equip experimental teachers with skills essential to judging social-emotional adjustment of children.

The second group of hypotheses dealt with pupil behavior. The experimental and the control underchosen children increased significantly in proportion of peer choices from the beginning to the end of the experimental year, indicating the operation of factors in both groups leading to increased peer acceptance. The difference between group gains, however, was not significant. Therefore, it was concluded that teacher changes which may have occurred as a result of in-service participation did not reflect themselves in greater peer acceptance of experimental underchosen children. Elkins (1951) reported enhancement of pupil self-esteem and improved social adjustment by permitting children to structure the classroom social situation. McClelland and Ratliff (1947) found fewer unchosen children through the use of sociometry. Jennings (1948) helped the unchosen pupils improve their social relations through work and other activity groups structured on the basis of sociometric data. Although experimental teachers in the present study utilized these techniques in working with their pupils, the results were at variance with those reported by the above investigators.

Little evidence was found which supported the assumption that children taught by in-service participants would undergo greater improvement in achievement and social-emotional adjustment than would children taught by non-participants. Comparisons of all experimental children with all control children showed that the difference, occurring in the expected direction, between mean CAT scores were not great enough to reach significance. Analyses of CAT scores stratified according to grade levels also yielded negative results. The same results were obtained when CTP scores were subjected to gross and stratified treatment. Hence, the conclusion was drawn that the in-service program did not bring about improvements in pupil behaviors measured by the CAT and the CTP.

The third group of hypotheses related to length of in-service participation and accuracy in identifying least- and most-chosen pupils as well as lowest- and highest-scoring pupils on the CTP. Even though in-service participation failed to produce superior accuracy in identifying least- and most-chosen pupils, analyses of accuracy scores categorized according to length of participation yielded more positive results, possibly because of the masking effects of gross treatment. Three years' participation was apparently not sufficiently long to exhibit a superiority over two years. Nor was four or more years' participation superior to three years. However, four or more years were long enough to manifest a superiority over two years. It was concluded that length of in-service participation was related to accuracy of identifying least-

and most-chosen children.

Analyses of accuracies in identifying lowest- and highest-scoring pupils on the CTP, stratified according to teacher MTAI scores, yielded negative results. The conclusion was drawn that increasing length of participation in the training program did not improve teachers' skill in identifying least- and most-adjusted children, as measured by the CTP.

The fourth group of hypotheses dealt with extent of teacher attitude change, as measured by the MTAI, and extent of pupil changes in adjustment and achievement, as ascertained by the CTP and CAT, respectively. Teacher attitude changes failed to reflect themselves clearly in improved adjustment of underchosen children. The difference between mean gains of pupils categorized according to changes in MTAI scores of their teachers were not sufficiently large to be considered significant. Analyses of teacher MTAI scores and CAT scores of all pupils yielded results similar to those applied to MTAI and CTP scores. Therefore, results supported the conclusion that teacher attitude changes, as exhibited by MTAI scores, failed to enhance pupil adjustment and achievement, as measured by the CTP and the CAT.

The fifth group of hypotheses dealt with the effects of concerted teacher study of underchosen children upon achievement and adjustment of all pupils. Positive results were obtained at certain grade levels when CAT scores were stratified according to grade. At the first grade level, the control group scored significantly higher than the experimental group. The reverse was found to obtain in the third grade. However, since the variance ratio of the paired initial scores were highly significant in the case of first-grade data, the observed difference may be accounted for in terms of differing variances rather than differing means. Variances of third-grade experimental and control data were homogeneous. When $\underline{t}$ test was applied, the superiority of third-grade experimental pupils over the corresponding control pupils was shown to be significant at the .05 level. Consequently, it was concluded that the in-service program succeeded in enhancing indirectly the achievement of third-grade pupils only.

The same data as above were given grosser treatment in the form of covariance analysis of CAT scores of all pupils of all experimental and control teachers. Negative results were obtained. Therefore, from the standpoint of gross treatment of data, evidence supported the conclusion that the in-service program was ineffectual in indirectly producing improvement in achievement. Gross treatment of achievement data yielded results that agree with those obtained by sixteen independent researchers, reported by Brandt and Perkins (1956, 1957), which showed that academic achievement did not appear to improve as teachers learned to analyze child behavior according to scientific principles. On the other hand, results obtained at the third-grade level were at variance with those reported by these investigators.

Analysis of CTP scores stratified according to grade revealed that the fourth-grade control groups scored significantly higher than the corresponding experimental groups. A simple F test of the CTP variances supported the assumption of equal variances. Therefore, the difference observed was attributable to variation in means rather than in variances. Thus, the conclusion was drawn that the in-service program was not successful in bringing about changes in pupil adjustment in any of the grades and that factors were operating to a greater extent in the control fourth grade to produce superior social-emotional adjustment of control children in this grade. These results differ from those found by McKeachie and his associates (1954). They demonstrated a significant superiority of pupil-centered classes over subject-matter-centered classes in improved pupil adjustment.

Discussion

Several comments bearing on the overall nature of the research project and the results which were obtained might be made. The project staff feel that the tests which were used during the project constitute the best possible choices that could be made for use under the conditions that study was done--mass testing of many pupils at different grade levels by teachers who were relatively unacquainted with other than teacher-made instruments. However, these tests provided gross measures of rather broad teacher and pupil behavior patterns. Furthermore, both the MTAI and Purdue, which were administered twice to all teachers, are essentially self-reports that require the frank and candid responses which deliberately or unwittingly might not have been given. Consequently, the staff feel that had the study been done on a smaller scale then it would have been possible to use complex, clinical instruments that provide more precise assessments of narrow, subtle behaviors. Had such measures been obtained then the expected differences would have been more likely to occur.

Also, the staff feels that the seven-month experimental period was too short to permit the desired pupil changes to occur. The collected evidence certainly casts doubt on the effectiveness of the in-service training program with regard to measured pupil and teacher changes. However, the overwhelming majority of experimental teachers claim that the program was a very valuable one that gave them new insights into growth, development, and learning which, in turn, caused them to change their classroom behaviors in ways that were noticeable to them. If their opinion is a valid one then it might be that although the amount of desired pupil changes did not occur at the acceptable level of significance, such changes were occurring and would have been noted had the posttest data been collected much later and/or if the pupils had been under the influence of the teacher for a longer period of time. To support this point further, it should be noted that although the majority of research hypotheses were not substantiated, in most cases the summarized data favored the experimental teachers, pupils, and underchosen children. On the basis of the obtained run of differences between the experimental and control groups, one can justifiably infer that it is improbable that the experimental treatment was without effect.

The staff now feels that desired pupil changes will occur only if the pupils are exposed for a long period of time, certainly more than seven months, to the experimental teacher. If this feeling is valid, and because the typical elementary school promotion scheme calls for the pupil to change teachers each year, then it is unlikely that much progress will be made in improving the emotional health of all pupils unless all teachers reflect in their classroom behavior the principles of child growth and development, thereby producing a cumulative effect on pupils over a period of years.

Another trend in the data might be noted: the survey data suggested that the teacher who had been in the training program for the longest period of time achieved higher statuses on the criteria than did other experimental teachers. This tendency causes the staff to feel that short in-service training programs, one-shot workshops, etc., are relatively ineffective with regard to producing pervasive changes in teachers. Perhaps this inference from the data should be restricted to the particular content which is taught and the goal which is sought. In the case of this project, the content and goal were such that before the teacher could become effective in the manner desired, it was necessary for her to undergo much intellectual and personality reorganization. The latter is indeed difficult to achieve over a short period of time in a group situation.

The staff feels that additional research should be done on problems encountered in and leads coming from this project. The strategy employed in the project was a bold one. The staff took a logical step from the in-service training program to the ultimately sought changes in pupils' behavior. Had the data supported the hypotheses, then a significant contribution would have been made. But since the data were largely non-conclusive, it is worthwhile to consider troubleshooting the entire process one logical step at a time. Thus, the first step would be to determine if the in-service training program does in fact alter teacher knowledge, attitudes, etc. If so, then does change in knowledge and attitudes result in changed classroom behavior? If so, then does change in teacher behavior produce desirable changes in pupil behavior, etc? A sequence of research like this would enable identifying the spots at which breakdown occurs in the process that, originally had been hypothesized to flow unerringly and inevitably.

Summary

Experimental teachers underwent greater change in attitudes of acceptance and objectivity, as measured by the MTAI and the Purdue, in dealing with children than control teachers with whom they were matched. Gross treatment of data indicated that the program failed to improve experimental teacher accuracy in identifying least- and most-chosen children. But treatment of categorized data showed that identification accuracy improved with increase in length of in-service participation. The program failed to improve teacher accuracy in identifying least- and most-adjusted pupils, as measured by the CTP. Subjective evaluation of teacher classroom practices in dealing with children suggested that experimental teachers employed increasingly the child development concepts considered in the training program.

Experimental and control underchosen children did not differ in gain in number of peer choices. Both groups underwent significant improvement. The in-service program failed to improve social acceptance of underchosen children.

Experimental pupils in Grade 3 made significant advances in achievement. The in-service program succeeded in improving indirectly pupil achievement in this grade. The program failed to improve pupil social-emotional adjustment as measured by the CTP. On the contrary, factors appeared to be operating in the control fourth grade which led to greater social-emotional adjustment than in the corresponding experimental grade.

APPENDIX

Directions for Scoring
"Guess Who Test"
Troy Growth and Development Project

Items 1-a through 20-a are positive. Items 1-b through 20-b are negative. The score consists of the number of positive votes, that is, the number of times the name appears on items 1-a through 20-a minus the number of negative votes or the number of times the name appears on items 1-b through 20-b.

It would mean that if John Doe received 16 a's and 4 b's his score would be 12. Arranging the scores from highest to lowest, including the negative scores, would then give a picture of the total room somewhat similar to a sociometric picture and comparison could then be made.

GUESS WHO?

NAME____

GRADE_______________________________________

DATE____

DIRECTIONS

Below are some word pictures of members of your class. Read each statement and write down the names of persons whom you think the description fits.

Remember:

One description may fit several persons. You may write as many names as you think belong under each.

The same person may be mentioned for more than one description. Write "myself" if you think the description fits you.

If you cannot think of anyone to match a particular description, go on to the next one. You do not have to put a name in each place.

You will have as much time as you need to finish. Do not hurry.

Now you are ready to begin. REMEMBER to write one or more persons after each item if they fit these persons. GO AHEAD.

1-a Here is someone who is very friendly and who seems to like making friends.

____

____

____

b. This person is a tattletale.

____

____

____

2-a. This person always seems to have a good time and seems to enjoy everything he or she does no matter where it is.

____

____

____

b. This person does not like the teacher.

____

____

____

3-a. Here is someone everybody likes, people are always glad to have him or her around.

____

____

____

b. Here is someone who uses other people's things without asking them and sometimes forgets to return them.

____

____

____

4-a. Here is a person who dresses well and is always clean.

____

____

____

b. Here is someone who disturbs the group while they are working.

____

____

5-a. Here is a person who asks politely to use other people's things and returns them promptly.

b. Here is someone who is unkind and won't help smaller children.

6-a. Here is someone who does not mind being told what to do and never bosses others.

b. This person doesn't try to do the best work he or she can.

7-a. This person seldom tells on other people.

b. This person doesn't take good care of the desks, books, and wastes materials.

8-a. Here is a person who always tries to do the best work he or she can.

b. Here is someone who is always telling others what to do, bossing them.

9-a. This person works quietly without disturbing others in the group.

b. This person quarrels a lot and gets angry easily.

10-a. This person likes to play with everyone.

b. This person "shows off" to get everyone to look at him or her.

11-a. Here is someone who enjoys talking and always seems to have something to say.

b. This person likes to play by himself.

12-a. This person never quarrels and seldom becomes angry.

b. Here is a person who does not like to talk very much and is very quiet, even when nearly everyone else is talking.

13-a. This person takes good care of the desks, books, and work materials.

b. Here is someone who usually breaks the rules.

14-a. Here is someone who always knows how to start games and often suggest something interesting to do so that others join in.

____

____

b. Here is a person who finds it hard to work quietly without moving around in his or her'seat.

____

____

____

15-a. This person doesn't seem to care whether anyone notices him or her.

____

____

____

b. Here is someone nobody cares much about. People do not want him or her around.

____

____

____

16-a. Here is someone who can work very quietly without moving around in his or her seat.

____

____

____

b. This is someone who never seems to have a good time, who never seems to enjoy very much of anything he or she does.

____

17-a. This person tries hard to follow rules.

b. This is someone who makes fun of anyone who cannot play a game well and doesn't try to help them improve.

18-a. This person likes all of the teachers.

b. Here is a person who dresses carelessly and is not always clean.

19-a. This is a person who tries to help those who cannot play a game well and doesn't make fun of them if they can't.

b. Here is someone who doesn't care much to make friends or who is bashful about being friendly or does not seem to have many friends.

20-a. This person is kind and helpful to smaller children.

b. Here is someone who waits for somebody else to think of something to do and doesn't think of interesting things for others to do.

Troy State College
Troy, Alabama

Directions for Giving Sociometric Tests

Become thoroughly familiar with these directions before administering the test.

Since the results of these tests are to be treated statistically it is important that all participants in the experimental group use the same questions and that the same number of choices be requested.

Unless you feel very confident that all children can correctly spell everyone else's name, it is usually wise to clearly write the first name of every child in the room (including those absent) on the chalkboard. Arrange the names in rows in the same order in which the children are seated, the top name representing the front seat. These procedures will help the children locate their choices, avoid erroneous spelling, and will tend to avoid the use of nicknames.

Provide each child with a clean sheet of paper. Be sure everyone has a sharpened pencil. Avoid giving at a time following any unusual incident which might cause any of the children not to be chosen.

Say to the children, "First put your name on the paper I gave you." Wait until this is done, then say, "There are many times when it would be helpful to know which members of our class you would choose to help you when we need three or more of you to work together on something. Write on your paper the first names of the three children you would most like to have work with you." Please have the children write the last names of those children who have the same first names.

It is important that every child in the room be given an equal chance to be chosen. If any children are absent, write their names on the board mentioning them by name saying, "Remember you are to choose only those who are in our room. (Point to the names, reading them aloud) are absent today. You may choose any of them if you wish. Do not include your own name.

When this is done and you have observed that all children have at least three names on their paper, (should any paper have less than three names, ask the child individually to add so he has three. If more than three appear, merely cross out all but the first three.) say, "Now turn your papers over. (Wait until all papers are turned over: I want to know which children in our room are your best friends. Write the names of the three children (for older children you will wish to use 'pupils', or 'students' instead of 'children') that you would like to have be your best friends."

In the lower grades it will be necessary to ask each child individually to make his or her choices while you write them on the separate sheets. Use identically the same questions and be sure each child understands that the choices must be of those in the room only, including those who are absent. If any child does not know another child's name, have the child point out his choice for you.

TROY STATE COLLEGE
TROY, ALABAMA

SOCIOMETRIC DATA SHEET

The results of the two sociometric tests, friendship and work, should be entered on the following pages and returned in the attached envelope.

Please fill in the following information:

Your Name: ______________________________

The Grade Level of the Pupils From Whom Data were collected: ____

Name of Your School: ______________________________

Mailing Address of School: ______________________________

Date Sociometric Data were Collected: ______________________

Today's Date: ______________________________

Were all absentees tested? _________ If not, how many were not tested? ______________

On the following pages, please enter the names of the pupils (last name first, please) in your class. The middle space on each line might be used for making tallies of the choices a pupil received on each sociometric. Please sum these tallies and enter the total number of choices each pupil received in the extreme right-hand column of the page. Please check the totals to be certain they are accurate.

Each pupil should have chosen three pupils from his class for each sociometric.

The "tallies" and "**total** number of choices" columns on the next page should contain the number of choices received on both sociometrics combined.

Troy State College
Troy, Alabama

SOCIOMETRIC DATA SHEET

Teacher's Name: ______________________________

Pupils' Names (Last Name First)	Tallies (Friendship & Work)	Total Choices (Friendship & Work)
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		

PARTICIPANTS

Experimental

Butler County

Dunn, Mary
Hicks, Louise
Huggins, Addie B.
Jones, Marie
Langford, Mabel
Leckie, Elizabeth
Morgan, Lillian
Raye, Irene
Thompson, Clara

Covington County

Ballard, Grace
Booth, Geraldine
Clary, Lena Rae
Gant, Arlene
Garner, Ina Lee
Holloway, Mary
Lowery, Jimmie
Maddox, Rebecca
Powell, Lois
Smith, Alice
Wright, Myrtle

Opp

Talley, Ara

Crenshaw County

Berry, Mattie
Connor, Frances J.
Davis, Mary
Gardner, Mary
Hicks, Gladys
Mooney, Christine

Monroe County

Ballard, Claudia
Brown, Louise
Murphy, Annie L.
Vice, Marian
Weatherford, Agnes
Weatherford, Ione
Johnson, Susie

Montgomery County

Beason, Reba
Johnson, Verabel
Martin, Arragene
Taylor, Gladys

Pike County

Booth, Irene
Crawford, Gussie
Roling, Gladys
Senn, Ruth

Laboratory School

Cleveland, Margaret
Fields, Martha
Solomon, Ellen
Whaley, Tex
Williamson, Eleanor

Control

Elba City

Grimes, Laura Lou
Hooper, Flossie
Ingram, Agnes
Lee, Hazel
Paul, Jean

Covington County

Brown, Jean
Powell, Elizabeth
Smith, Bettie Sue

Dallas County

Alexander, Earlene
Avery, Eugenia
Hillman, Mrs. Lyle
Martin, Willie P.

Monroe County

Farrar, Mrs. Otis
Grant, Ludie
Haskew, Katie
Kinsey, Kathryn
Lee, Hester
Newman, Elizabeth
Primm, Sarah
Rabon, Frances
Straughn, Mrs. Elgin P.
Vickery, Mrs. R. H.

Montgomery County

Bell, Dorothy
Jeter, Gertrude
Kyser, Madelle
McLeod, Evelyn
Scarborough, Ervel
Sessions, Nell

Pike County

Botts, Mrs. B. C.
Collins, Ruth
Corcoran, Audrey
DuBose, Mamie
Folmar, Evelyn
Folmar, Lois
Harvill, Opal
Hixon, Lucy
Loflin, Corina
Park, Mrs. Roy
Witherington, Mrs. Robert

Troy City

Boutwell, Bernice
Roling, Ellen
Sanders, Georgia M.
Smart, Zubie
Wingate, Josephine

Phenix City

Dowis, Louise
Long, Betty
Pitts, Mary Martin

Wilcox County

Dale, Bunnie
Hawthorne, Jeannie M.
Thomas, Sarah